

of

ALASKA

AND HER

GOLD FIELDS

BY
MAJOR H. O. S. HEISTAND
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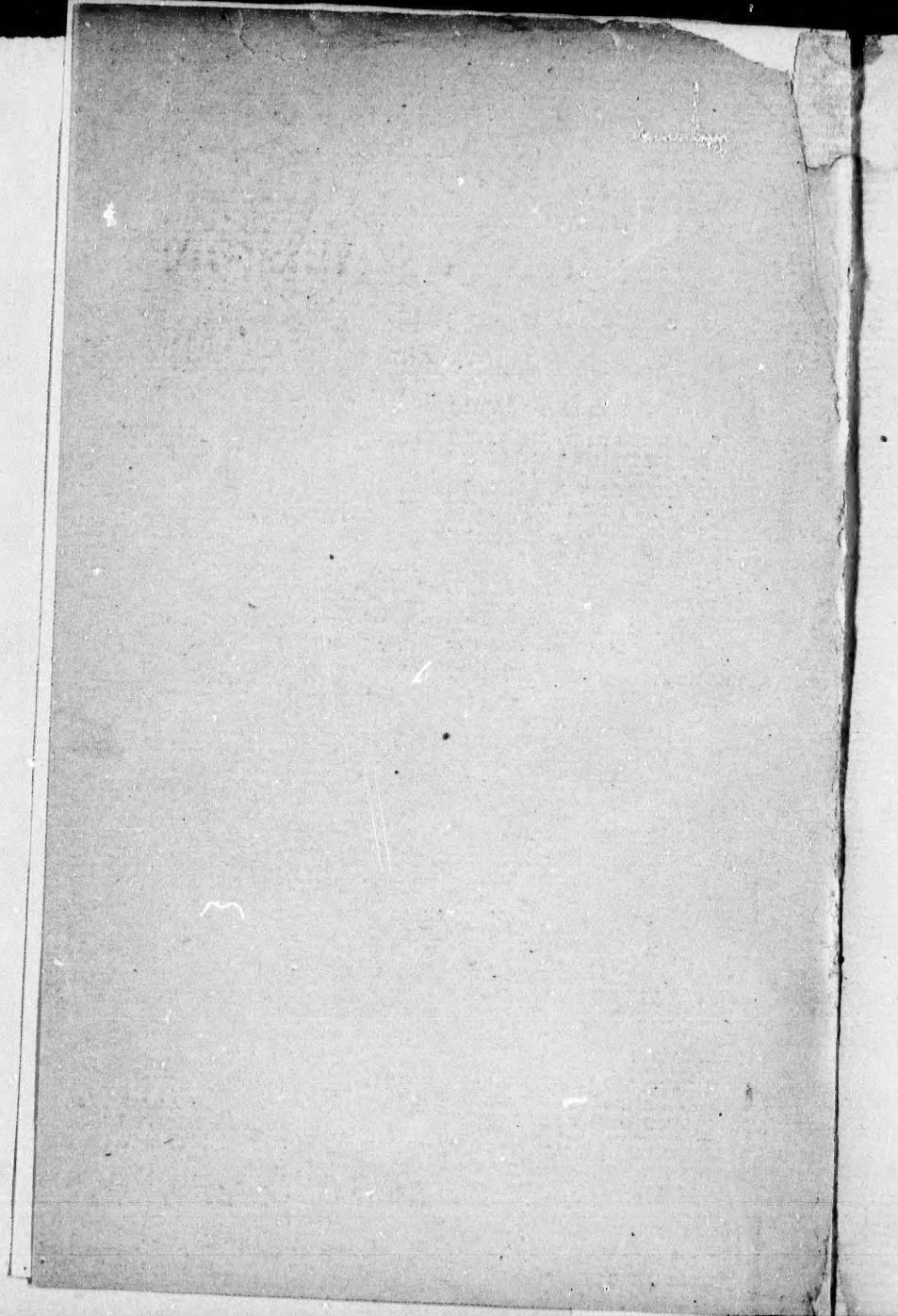
WITH
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BY PERMISSION
OF THE GEOLOGIC AND COAST SURVEY
U. S. MINING LAWS
CANADIAN MINING LAWS

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THE Territory of Alaska.

A Brief Account of Its History and Purchase; Its Inhabitants, Geographical Features and Resources, with especial reference to the Gold-Fields and Methods of Reaching Them.

COMPILED FROM
**Official Government Records and the Latest and Most
Reliable Sources,**

By **MAJOR H. O. S. HEISTAND,**
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the Division of Military Information, Adjutant-
General's Office, War Department.**

Washington, D. C., January 1, 1898.

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PREFACE TO ALASKA BY MAJOR H. O. S.
HEISTAND.

The original of this volume was prepared from the information from various sources in the Military Information Division of the Adjutant General's Office, together with that collected from various Departments of the Government. It was later enlarged, revised and brought up to date from all sources of information considered reliable, and its publication by the writer authorized that it might be placed within the reach of the public.

The author makes grateful acknowledgment of the courtesy of the officers of the United States Coast and Geodetic Survey office, by whose permission the excellent maps and most of the photographs used as illustrations appear; and also of valuable assistance given him by Major Arthur L. Wagner, Assistant Adjutant-General United States Army, in charge of the Information Division of the Adjutant-General's Office, and Lieutenant H. H. Whitney, 4th United States Artillery, on duty in the same office.

Washington, D. C., January 1, 1898.

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ALASKA.

CHAPTER I.

LOCATION, EXTENT, AREA AND GEOGRAPHICAL FEATURES.

Alaska lies in the extreme northwestern portion of the continent of North America, stretching along the coast, and by its chain of islands out into the Pacific Ocean, from the 130th to the 187th meridian of longitude west from Greenwich, a distance of about 2,300 statute miles; from north to south it lies between the 50th and 71st parallels north latitude, a distance of about 1,300 statute miles. Its northern boundary is the Arctic Ocean; it is bounded on the east by British Columbia, on the south by the Pacific, and on the west by Behring Sea and the Arctic Ocean. It has a coast line, including its islands, of over 26,000 miles, or about five-sevenths of the entire coast line of the United States. At Behring Strait the mainland of Alaska is but 60 miles from the mainland of Russia, and Big Diomed Island (Russian), near the center of the channel, makes a convenient half-way landing.

The western limit of the territory, Attu (Attoo) Island, is nearly 3,000 (2,943) miles west of San Francisco. When the fisherman of Maine is just spreading canvas for a morning sail, the fisherman of Attu is arranging his hut for the night.

Owing to the irregular shape of the Territory of Alaska, the extreme dimensions give but little idea of its area, which, according to the latest reliable computations, is 577,390 statute square miles; an area larger than the entire territory of the United States east of Indiana, and twelve times the size of the State of New York.

From the difference in proper names, growing out of native designations, those applied by the Russians, and still others in use by Americans, considerable confusion as to geographical terms has resulted, and will continue to exist until some means of uniformity is established and generally accepted. Travelers should not rely upon information from any but the most disinterested and reliable sources.

The country is rich in geographical detail. There are broad extents of morass, or swampy plains (tundra), with a dense growth of mosses and grasses, over a frozen subsoil and ice which does not thaw to a greater depth than eighteen inches below the surface; great mountain ranges, with lofty peaks and active volcanoes; broad, undulating prairies, and extensive valleys, through which course mighty rivers, fed by the melting snows and numerous lakes and springs—these great streams, with their many tributaries, form a perfect network of waterways over the surface, and constitute the arteries of the scant trade and travel. Massive glaciers, hundreds of feet in thickness, covering in some cases over a thousand square miles of territory, and loaded with moraine and vegetation, slowly grind their way to the sea;* the adjacent ocean is studded with islands, varying in size from the largest—Prince of Wales Island, having

*Lieutenant Abercrombie (Report on Alaska, 1885).

an area of 3,009 square miles—to mere points of rock almost hidden at high tide, and the main coast is everywhere indented with long arms of the sea, reaching into the depths of the near-by mountains.

The capital of the Territory is Sitka, located on the west coast of Baranof Island, in latitude 57 degrees north and longitude 135 degrees west. It was established by Baranof in the winter of 1799-1800. The town is about 1,300 miles from San Francisco, though by the usual vessel route the distance is over 1,600 miles. In 1890 the population was 1,190.

Juneau, founded by Joseph Juneau in 1880, with a population in 1890 of 1,250, is now said to be a progressive city of nearly 5,000 inhabitants, with fine buildings, wharves, waterworks and hotels, electric lights and amusements (Guide to the Yukon Gold Fields—Wilson).

Wrangell, on Wrangell Island, a village of about 300 souls, ten miles from the mouth of the Stikine River, is the point of departure for the gold fields by the way of the Stikine route.

Douglas City, on Douglas Island, with a population of about 400, is the location of the great Treadwell gold mines, and what is said to be the largest quartz mill in the world.

Yakutat, on the bay of the same name, has a population of about 300.

Nuchek, once an important trading point, but now only a small village, is on Hunchinbrook Island, 50 miles from the mouth of the Copper River.

There were formerly important trading points on the Kenai Peninsula, but of recent years they have lost their importance.

Kadiac Island is the seat of great Alaskan industry.

St. Paul, in the north of the island, does a large fur trade, and is the seat of several canning factories, said to employ 1,100 hands. Karluk, with a population of 1,123, is said to have the largest cannery in the world. Other villages, almost equal in size, on the island, are Alitak and Kadiak, having a combined population of about 900.

Afognac, with a population of 409, is on the island of the same name.

The Aleutian Islands, being mild in climate, were early occupied by the Russians, and many settlements resulted. On Unalaska Island there is an important point, Iliuliuk, having a church, custom house, stores and wharves. Small, thrifty villages of from 100 to 300 are on Ounga, Unimak, Athka and the Pribylof Islands.

Port Chester is a Chimmesyan Indian village of about 800 people, on Annette Island. It has a steam saw-mill, church, shops, stores and an Industrial Home.

St. Michael, on Norton Sound, is one of the most important points on the coast. It was established as a Russian redoubt in 1835. The island has an area of 51 square miles, all embraced within the United States Military Reservation. Besides the military post established there by the War Department in October, 1897, there are two trading posts of rival firms, both used as a base of supplies for the Upper Yukon country and the Arctic trade. There is also a Russian church and parsonage building. Swedish and Episcopal Missions are on the adjacent mainland. In October, 1897, there were 180 people on the island.*

At Port Clarence, just south of Behring Strait, there is a fine harbor, where whaling vessels lay up and

*Report of Commanding Officer, Fort St. Michael.

wait for supplies. A village of about 500 people, more than half of whom are white, is located here, and adjacent to it is a reindeer farm. Point Hope (301—5 white), Cape Smythe (246—46 white), Icey Cape (57) and Point Barrow (152) are Arctic villages. The latter was the point occupied by Captain P. H. Ray, United States Army, 1881-3, in command of the United States station of the International Polar Expedition.

Nulato and Nuklakayat are Yukon trading posts, 467 and 568 miles from the sea (Lieutenant Allen). Rampart City is a new mining village of about 400 people, established in the summer of 1897, on the Yukon River, 100 miles or so above Nuklakayat.

Fort Yukon, established by the Hudson Bay Company in 1847, on the Yukon River, nearly 900 (1,300 by water) miles from the sea, is just within the Arctic Circle, where, in summer, the sun is visible for the entire 24 hours. Here the Yukon River widens out to several miles in extent and flows through many shallow channels over the Yukon Flats, making navigation slow and difficult at low water.

Circle City, founded in 1891, 100 miles above Fort Yukon, had a population in 1896 of 1,150, including about 40 women. Missions are established there and hospitals proposed. It is said that many of the inhabitants have abandoned the town, at least temporarily, to go to richer mines.

Forty-Mile Post, near the mouth of Forty-Mile Creek, was at one time a thriving mining town—a true Mecca of the North—but it is said to have diminished in importance since the drouth of 1896 and subsequent discovery of rich diggings elsewhere.

The principal rivers are the Yukon and its largest

two tributaries, the Tanana and Koyukak; Kuskokwin, Copper and Sushitna.

The principal mountains are Mount Logan, altitude 19,500 feet; Mt. St. Elias, 18,010; Mt. Wrangell, 17,500; Mt. Tanana, 16,600; Mt. Drum, 13,300; Mt. Sanford, 13,000; and Mt. Blackburn, 12,500. The average height of the main range is from 10,000 to 12,000 feet, with but few practicable passes.

Fort Cudahy.—Fort Cudahy is a trading establishment in British territory, on the Yukon River at the mouth of Forty-Mile Creek, on which there are rich placer mines. There is a saw-mill in the vicinity.

Dawson City.—Dawson City, the chief town of the Klondike district, was established in August, 1896. It is in British territory, about 50 miles east of the Alaska boundary, on the right banks of the Yukon and Klondike Rivers, near their junction. It is 170 miles from Circle City; 1,598 miles from Seattle, by the way of Juneau, and 4,722 miles by way of St. Michael. It can be reached from Seattle in from 35 to 90 days, according to the route. The townsite occupies a square of 160 acres, owned by Mr. Joseph Ladue, formerly a resident of New York State. It is laid out in regular streets and squares. Town lots which sold for \$5.00 in 1896 were worth from \$3,000 to \$5,000 this year (1897). All of the houses are constructed of logs, the logs selling for \$3.00 each, and lumber is worth \$150.00 per thousand feet. Many of the inhabitants live in tents. The gold "diggings" are from 12 to 25 miles distant.

There is a population of from 3,000 to 5,000, mostly citizens of the United States. There are about 75 women and some children. The Canadian Government has established a post-office at Dawson City, and the mail is carried once a month by the members of the Northwest Mounted Police, a Canadian military force, also charged with preserving order and maintaining the law.

There are said to be a few horses, but dogs are generally used for transportation purposes.

The climate is severe, and changes are sudden. There is a short, hot summer, lasting from May to September, with practically no spring or autumn conditions—leaping from one extreme to the other. The ice begins to break up between the 1st and 15th of May, and by the last of September winter has begun again, the month of October being described as similar to the month of November in the northern part of the United States. The mean temperature does not vary much—not much more than 25 degrees from month to month. The mean temperature is: Spring, 14 degrees; summer, 50 degrees; autumn, 17 degrees; winter, 30 degrees, with extremes for the year running from -68 to +75 or +100 degrees. The earth is frozen to the greatest depth yet excavated and thaws for only eighteen inches to two feet during the summer. The longest day of the year, June 22d, the sun rises at 1:30 a. m., and sets at 10:30 p. m., with good twilight for the rest of the day.

The climate is healthy, and deaths have been very few. Mosquitoes are said to be very troublesome, and so small that they go through the ordinary netting. Game is very scarce, so that all food must be transported to the town from some base of supply.

The following prices give an idea of the cost of living in Dawson City in the summer of 1897, and were considered reasonable:

Flour,* per 100 pounds.....	\$12.00
Bacon, per pound.....	1 50
Sugar, brown, per pound.....	.20
Sugar, granulated, per pound.....	.25
Rice, per pound.....	.20
Condensed milk, per can.....	.60
Butter, per pound.....	1.50
Eggs, per dozen.....	5.00
Beans, per pound.....	.12½

*Since writing the above, the scarcity of provisions in Dawson City has caused the price of flour to rise to the almost prohibitive price of from \$100 to \$125 for a 50-pound sack, and other provisions in proportion. Single meals at restaurants cost from \$3.50 to \$5.00.

Salt, per pound.....	\$	.15
Dried fruit, per pound.....	\$ 0.25 to	.35
Cigars, each.....		.50
Tobacco, per pound.....	1.50 to	2.00
Blankets, per pair.....	16.00 to	30.00
Linen shirt.....		5.00
Underwear, per suit.....		10.00
Canvas overalls.....		2.50
Boots.....	10.00 to	12.00
Suit of clothes, ready made.....	30.00 to	50.00
Fur overcoat.....	25.00 to	100.00
Dogs, for sleds.....	100.00 to	300.00
Bread, per loaf.....		.50
Lumber, per thousand feet.....	100.00 to	200.00
Meals at restaurant, each.....		1.50
Wages, per day.....	5.00 to	15.00

Considerable business is done in the town, and the place is said to be one of great activity. Gold passes current for money at \$17.00 per ounce. There are restaurants, bakeries, saloons, dance halls, barber shop, a bath establishment, etc. At last accounts there were ten saloons and three restaurants. Drinks were sold at the uniform price of 50 cents each, and in the restaurants the \$1.50 dinner was composed of bacon, beans, bread, coffee, cheese and dried fruit. The dance-hall is 80x40 feet, with an orchestra of three pieces. There is also a laundry, which charges 25 cents a piece for its work. Gambling is prevalent among all classes, but crime is almost unknown.

The Church of England has a resident minister, and other ministers are on the way to Dawson City. Bishop Bompas is the head of the diocese, which includes the Klondike.

CHAPTER II.

HISTORY.

That portion of the territory of the United States known as Alaska was, up to the year 1867, borne on the maps of the world as Russian America. Russia held it by right of discovery.

During the reign of Peter the Great was organized the first of the exploring expeditions which led to the discovery of Alaska, and gave territory on the Western Hemisphere to his empire, thus enabling the Czar to extend his dominion over three continents. He selected Vitus Behring, a Danish captain in the Russian service, to command the expedition, which set out February 5, 1725; after sixteen years occupied in exploring the coast and waters of Siberia, Alaska was sighted. The Czar died three days after the expedition started.

In 1733 Empress Anna fitted out the second expedition. It occupied six years crossing Siberia, and in the spring of 1741 Captain Behring, with two small vessels, one commanded by himself, and the other by Lieutenant Chirikof, put out from Kamchatka, on the waters of Behring Sea. The vessels became permanently separated. On the night of July 15, 1741, Chirikof sighted land in latitude $55^{\circ} 21'$ north, which is near the extreme

point of the mainland of the Alaskan Peninsula. Subsequently it became known that Chirikof's discovery preceded by thirty-six hours Behring's first sight of the mainland of Alaska. Chirikof sent two landing parties ashore, and the members were massacred by the natives. The commander, with his reduced crew, returned to Kamchatka, after a period of intense suffering and hardship. Many of his men, including himself, were seized with scurvy. Chirikof was among the number who recovered.

Captain Behring landed on the coast, and shortly afterward returned to his ship, weighed anchor and set sail for Kamchatka, but his vessel was wrecked on what is now known as Behring Island, in the Commander group, where his crew spent the winter, many of them dying, the remainder living in dugouts in the sandbanks of a small stream and subsisting on sea animals which they captured and the flesh of dead whales thrown upon the beach, until the following spring, when the few survivors constructed a boat of the timbers of the wrecked vessel and made their way to Siberia. Behring died on the island December 8, 1741.

There is no record of any effort to visit the country until 1743, when expeditions to engage in the fur business were inaugurated by the Russian merchants. The first adventurer of this class was Emelia Bassof, a Cossack sergeant of Lower Kamchatka, who made four voyages to the Commander Islands in 1743, 1745, 1747 and 1749. He was followed by a sailor named Nevodchikof, who reached the islands of Attu and Agatu in 1745. In 1749 a vessel reached the island of Athka and others in its vicinity. In 1759 a trader, Glottof, advanced as far as the island of Oumnak, and subsequently discovered the

whole group of islands, including Unalaska (Oonalashka), now known as the Fox Islands. Glottof, so say the traditions of the natives of those islands, was the first Russian who came among them; he furnished a map of the region to his government. In 1760 Andreian Tolstykh landed on the island of Adakh, where he remained three years, and completely explored the island, and rendered a detailed report of his operations and their results to the Russian Government.

In 1761 a ship belonging to the merchant Bechevin reached the mainland of the Alaskan Peninsula. By this time the continued oppression of the natives by the traders aroused the former's fury and brought on a series of conflicts covering a period of more than twenty years, in which many lives were sacrificed.

August 3, 1784, there landed on Kadiak Island a trader named Shelikhof, who, for many years, operated on a large scale. Shelikhof established peaceful relations with the Indians, when possible, and failing in that, fought them with vigor. He was victorious in so many conflicts that it enabled him to establish a large number of outposts for hunting parties. After a victory, he held hostages to insure the good behavior of the savages. Shelikhof was a shrewd trader and a bitter foe, though possessed of a kindly disposition. For his hostages, prisoners and the friendly natives he established schools and churches of the Greek Catholic faith. His arguments setting forth the advantages the natives would secure by embracing Christianity and adopting civilization, being simple and practical, always met with hearty response. Many of the natives were baptized and received into orthodox membership. Shelikhof returned to Russia in 1787, taking with him thirty natives.

The estimated population of Alaska at that time was about 5,000 souls, but it is not reliable.

In 1790 another trader, Baranof, owing to a series of misfortunes in his own affairs, was tempted to accept an interest in the business established by his rival, Shelikhof, and arrived in Alaska to assume control of the latter's fur interests in the new country. The extraordinary energy and decision displayed by Baranof in the management of his own affairs in Siberia had long attracted the attention of Shelikhof.

To the ability and efforts of Baranof is due the final establishment of the Russian Empire on the continent of North America.

In the meantime, Captain Cook had visited the coast, but the Russians were fully acquainted with the result of his voyages and visits to the northwest of America. Gerassim Pribylof had also discovered the summer haunts of the fur seal herd on the islands which now bear his name. The result of this discovery was to secure to Russia the formerly lost trade with the Chinese, who placed high value upon the fur of the seal, in the tanning and coloring of which they had become expert. July 20, 1795, Shelikhof died, but his widow continued the management of the company's affairs. Before his death Shelikhof had sought the union of all the various companies trading in Asiatic Russia and the American Colonies. In 1797 the consolidation was effected, and the new firm, under the name of the Russian-American Company, received a charter from the Russian Government, granting it the exclusive right to all territory and resources of water and land in the new Russian possessions for a period of twenty years. This charter, granted by the Emperor Paul in 1799, marks an era in the

Alaskan history; from that time to its cession to the United States, the history of the territory is the history of the Russian-American Company. Baranof, who had shown so much skill and ability in extending business, continued to conduct the affairs of the company in Alaska. He was a man of great determination, courage and physical endurance, but, through his quarrelsome disposition, made numerous enemies, and became the victim of conspiracy and treachery. In 1808 the company commissioned his successor, who, however, died before leaving Kamchatka. After the discovery of a plot to kill him in 1809, Baranof showed evidence of a broken spirit, and the effects of old age and constant struggle became plainly visible.

Finally, in 1817, Captain Hagemeister was sent to Sitka, with instructions to relieve Baranof as chief manager of the Colonies. Hagemeister concealed his real capacity for several months after his arrival, and spent the time in familiarizing himself with the affairs of the company until January 11, 1818, when suddenly he produced his commission and ordered Baranof to turn over his command. The old man promptly complied, and, although millions had passed through his hands, so conscientious had he been in his relations with the company, and so little attention had he paid to his private affairs, that, at the age of 80 years, he found himself poor and in feeble health. Baranof started back to Russia in the "Kutuzof," the ship which had brought Hagemeister to Sitka. At Batavia, where the vessel was detained for a few days, he went ashore and contracted malarial fever, from the effects of which the creator of Russian America died, April 16, 1819. Hagemeister conducted the affairs of the company until 1821, when he was relieved by

Mikhaïl Ivanovich Muraviev, who occupied himself with the organization of colonies and extending the trade of the company, whose charter had been renewed. Under Muraviev's administration the boundary of the Russian possessions in America was established. The treaty with the United States was concluded April 17, 1824, and that with England on February 28, 1825. During his administration (1823), the priest Mordovsky, with his assistant missionary monks, arrived and spread the gospel among the natives with such vigor that at the end of three years the Russian Church in the Colonies had 10,561 communicants, of whom 8,532 were natives; schools were established at Sitka, Kadiak and Unalaska.

In 1826 Muraviev was succeeded by Captain Chistiakof, whose administration was marked by the exploration and mapping of the Alaskan coast and islands.

Chistiakof, after a prosperous administration, was relieved in 1831 by Baron Wrangell, who made a continuous, though unsuccessful, effort to destroy the English establishment, the Hudson Bay Company, which had grown to be a strong and dangerous rival of the Russian-American Company.

In 1836 Baron Wrangell departed, and Captain Kuprianof assumed the direction of affairs, and turned his attention to the extension of the company's interests toward the north, and in 1838 had reached out by exploring parties as far as Point Barrow. The Yukon, then called Kvikhpak, was ascended as far as Nulato. From 1836 to 1840 small-pox ravaged the settlements, and nearly 2,000 deaths resulted, mostly among the natives.

In 1840 Captain Etholin was appointed chief manager

of the Colonies. Etholin found great distress as the result of the small-pox scourge, and occupied himself with gathering the scattered inhabitants into larger villages, where their wants could be more easily made known and provided for. Aided by his wife, he engaged in philanthropic work in the education of the young Creoles and natives.

Etholin was succeeded in 1845 by Captain (subsequently Admiral) Tebenkof, whose attention was largely occupied gathering the data necessary to the completion of what Mr. Petroff calls "the best atlas of the coast of Alaska ever published." Tebenkof, like his immediate predecessors, knew but little about the fur trade, and the shares of the company's stock continued to decrease in value.

Tebenkof was succeeded in 1851 by Captain Rosenberg, who in turn was relieved by Captain Voievodsky, under whose administration the affairs of the company continually grew worse, and its obligations increased to such an extent that efforts were made to transfer to the Government the expense of maintaining its authority in the Colonies. Russia having just emerged from the expensive Crimean War, the Imperial Cabinet rejected the proposition, and the grant of a new charter was deferred from year to year.

Voievodsky was relieved by Captain Furuhelm in 1859, but the company refused to select his successor until its charter was renewed. In the meantime, Government officials were gathering information and preparing reports upon the condition of the company's affairs, but their reports were too conflicting to form a basis of intelligent action.

Early in 1864 it is said that the United States Gov-

ernment was approached privately in regard to the purchase by it of Russian America. The matter was allowed to drop, however, owing to the war, then in progress.

In 1865 the managers of the Western Union Telegraph Company sought a route, by way of Behring Strait, for a wire to Europe. Its surveying parties, during that and the following year, were actively engaged cutting a trail 120 feet wide, which, though much overgrown, is still plainly seen through the forests on their line. The enterprise was abandoned, owing to the successful completion of the transatlantic cable.

After the refusal of the Russian-American Company to appoint a new chief manager, the Emperor of Russia sent out Prince Maksutof as Military Governor. Maksutof remained in that capacity until the Territory was transferred to the United States, and was some time after his appointment invested with full powers by the Russian-American Company, assumed control of its affairs and closed out its business.



JUNEAU WATER FRONT.



GOODMAN GLACIER—COPPER RIVER.

CHAPTER III.

ACQUIREMENT OF THE TERRITORY—EXPLORATION.

In the year 1867 Russia, for a consideration of \$7,200,000 in gold, ceded all the territory and dominion then possessed by her on the Western Continent to the United States. The original price agreed upon was \$7,000,000, but when it was understood that there existed in the Territory some fur and ice monopolies granted by the Russian Government, to quiet their claims and prevent the possibility of subsequent complications, an additional sum of \$200,000 was added to the purchase money, to free the country of all incumbrances. The treaty describing the boundary was signed March 30, 1867, in the City of Washington, by Hon. William H. Seward, Secretary of State, for the United States, and by Privy Counsellor Edward de Stoeckl, Russian Minister to the United States, for his country. The treaty was ratified by the United States Senate May 28, 1867, and the proclamation of the President, setting forth its terms in the French and English languages, was issued on the 20th of June, 1867.

Alaska is therefore the last acquisition of territory by the United States. At the time of its purchase the price, less than two cents per acre, was, by a great many people, declared excessive, and Mr. Seward met with great opposition to his project in the United States Senate, and was the subject of much ridicule by the press

of the country; but calculating the possible development of the future, based upon discoveries already made, the territory proclaims his sagacity and reflects the wisdom of his policy. In August commissioners were appointed by Russia and the United States to complete the formal transfer of the territory. The \$7,200,000 had not yet been appropriated by Congress, but Russia, reposing entire confidence in the good faith of the United States, signified her readiness to make the delivery without waiting for payment. Major-General L. H. Rousseau, of the United States Army, and Captain Pestchouroff, of the Russian Navy, were the commissioners. The transfer was made October 18, 1867, at 3:30 in the afternoon, with suitable ceremony. General Rousseau's report to the Secretary of State says:

"The day was bright and beautiful. We fixed the hour of three and a half o'clock for the transfer. General Jefferson C. Davis, commanding the troops, Captain McDougal, of the 'Jamestown,' Captain Bradford, of the 'Resaca,' and the officers of their respective commands, as, also, the Governor of the Territory, Prince Maksutof, were notified and invited to be present. The command of General Davis, about two hundred and fifty strong, marched up to the top of the eminence on which stands the Governor's house, where the transfer was to be made.

"At the same time a company of Russian soldiers were marching to the ground, and took their place upon the left of the flag-staff, from which the Russian flag was then floating. Prince Maksutof and the Princess, together with many Russian and American citizens, and some Indians, were present.

"It was arranged by Captain Pestchouroff and myself

that in firing the salutes on the exchange of flags, the United States should lead off, in accordance with your instructions, and that there should be alternate guns from the American and Russian batteries, thus giving the flags of each nation a double national salute; the naval salute being thus answered in the moment it was given. The troops were brought to 'present arms,' the signal given to fire the salute, and the ceremony was begun by lowering the Russian flag. The United States flag (the one given us for that purpose, by your direction from Washington) then began its ascent, and again the salutes were fired as before, the Russian water battery leading off. The flag was so hoisted that, in the instant it reached its place, the report of the last gun of the 'Ossippee' reverberated from the mountains around. The salutes completed, Captain Pestchouroff said:

" 'General Rousseau, by authority from His Majesty, the Emperor of Russia, I transfer to the United States the Territory of Alaska.' And, in as few words, I acknowledged the acceptance of the transfer, and the ceremony was at an end. Cheers were then spontaneously given by the citizens present."—*Seward in Washington*—*Seward, F. W.*

The United States flag used upon the occasion is now deposited in the State Department at Washington.

Of the ceremony, Mr. Petroff says:

"The Princess Maksutof wept at the spectacle. * *
* * The native Indians, in their canoes, witnessed it from a distance, listening stolidly to the booming of cannon, and gazing with indifference upon the descending and ascending flags. Of the nature of the proceedings they had a faint and imperfect conception; but one thing they did realize—that the country they once

imagined their own was now being transferred to a strange people, by what must have appeared to them a strange ceremony."

Many names, such as Sitka, Yukon, Aleutia, etc., were suggested for the new Territory, but Mr. Seward, with whom the final decision rested, chose Alaska as being "brief, euphonious and suitable." The word is a corruption of Al-av-ek-sa—the name given by the native islanders to the mainland.

Almost immediately after the annexation of the Territory by the United States, the eastern boundary became the subject of informal discussion between this country and Great Britain, and in his annual message to Congress, December 2, 1872, President Grant recommended the appointment of a joint commission to fix the boundary, but Congress took no action, and the matter rested for several years. On May 17, 1886, President Cleveland transmitted to Congress copies of correspondence between Secretary Bayard and Minister Phelps upon the subject, and recommended an appropriation of \$100,000 to cover the expense of a preliminary survey of the frontier. Conferences between representatives of the two governments have been held since, but no joint results have been reached. Surveying parties of both the United States and Canadian Governments have been at work independently along the 141st meridian, and their work closely agrees. At one point the difference is but 6 feet 7 inches, and at another between 500 and 600 feet, and when a comparison of results is finally made, even closer approximation is expected. So far as the border marked by the 141st meridian west from Greenwich is concerned, the only difficulty is the location of that meridian, which becomes more difficult from the fact that

the stars which are usually observed in such work are obscured during the working season of the year by the almost continuous daylight. That portion of the border which follows the chain of mountains parallel to the coast line is more difficult to survey, and its exact location on the ground is yet to be determined and marked.

Shortly after the United States acquired the Territory, it was visited by General H. W. Halleck, United States Army, then in command of the Division of the Pacific, and on October 29th of that year Battery H, Second Artillery, and Company F, Ninth Infantry, under command of Colonel Jefferson C. Davis, Twenty-third United States Infantry, took station at Sitka.

General George H. Thomas succeeded General Halleck in command of the Division of the Pacific, and visited the Territory in 1869. The transfer of Alaska Territory had taken place on October 18, 1867, but quarters for the troops were not available until the 29th. March 18, 1868, the Military Department of Alaska was created, with Colonel Jefferson C. Davis, Twenty-third United States Infantry, in command. In June of the same year the occupying force was increased by the addition of Batteries E, F, G and I, of the Second Artillery. Continually from the time of original military occupation, until 1877, different points in Alaska Territory were garrisoned by United States troops. The principal posts were Sitka, on Baranof Island; Fort Tongass, on Tongass Island; Fort Wrangell, on Wrangell Island; and Fort Kadiak, on Kadiak (Kadiak) Island, in St. Paul's Harbor. The last troops were withdrawn from the Territory in June, 1877. During the ten years of military occupation, the following troops served in Alaska:

TROOPS.	FROM	TO
2d Artillery,	C.....June 2, 1871	January 4, 1873
"	E.....April 29, 1868	October 7, 1870
"	F.....August 2, 1868	October 3, 1870
"	G.....June 6, 1868	September 18, 1880
"	H.....October 29, 1867	October 7, 1870
"	H.....June 27, 1872	January 4, 1873
"	I.....October 8, 1868	June 29, 1872
†4th "	A.....June 14, 1876	June 15, 1877
"	C.....December 28, 1872	August 18, 1874
"	D.....December 28, 1872	August 18, 1874
"	F.....August 16, 1874	June 17, 1876
† "	G.....June 14, 1876	June 14, 1877
"	L.....August 16, 1874	June 17, 1876
† "	M.....June 17, 1876	June 14, 1877
*9th Infantry,	F.....October 29, 1867	May, 1869
21st "	B.....August 18, 1875	November 9, 1876
23d "	E.....July 3, 1869	June 3, 1871

After the withdrawal of the troops in 1877, there was no military occupation of the Territory for two years.

In May, 1879, there was a threatened outbreak of Indians, and the United States ship "Jamestown," Commander L. A. Beardsley, took station and remained about three years in Alaskan waters to protect citizens and property. Efforts at surveying and exploration were made by the Navy, but the "Jamestown," being a sailing vessel, could not ascend the rivers, and little progress in the work was made.

Since their entry into Alaskan waters, in 1879, naval forces have been maintained there. The vessels most notable in this service are the "Wachusett," "Adams," "Pinta," "Thetis" and "Alert." The revenue cutters "Bear," "Corwin" and "Rush" have performed notable service in Alaskan waters in executing the laws and relieving distress.

Concerning the service of the United States Marines in the Territory, Colonel Heywood, Commandant of the Corps, under date of November 16, 1897, says:

"In August, 1884, a guard, consisting of one lieu-

*First troops ordered to Alaska.

†Last troops in Alaska.

tenant and twenty enlisted men, was ordered to the U. S. S. "Pinta," stationed at Sitka, Alaska, and were quartered on shore in the old Russian barracks. The guard was increased from time to time, as the necessities of the service required.

"On June 1, 1892, the Marine Barracks was finished, and a post was established, under the command of a captain.

"On November 16, 1896, the strength of the command was again increased to forty-four enlisted men, which is still the complement.

"The duties of the command are to protect the Naval Storehouse and keep order in the Territory, looking out for the Indians, or any disturbance that may arise, upon the request of the Governor."

In 1897, owing to the increased interest in Alaska, caused chiefly by the report of rich gold mines therein, the War Department dispatched a military force to the Territory to protect American citizens and render prompt aid, if necessary, to distressed travelers. Captain J. H. Ray, Eighth Infantry, accompanied by Lieutenant W. P. Richardson, of the same regiment, proceeded in advance to the Yukon country to investigate and report existing conditions, and were followed by Lieutenant-Colonel George M. Randall, Eighth Infantry, with a small force of infantry, to Saint Michael, where they arrived October 9th, and a military post was established. A military reservation has been set aside, as described in the following order:

"WAR DEPARTMENT,

"WASHINGTON, October 20, 1897.

"1. By authority of the President, the land known as St. Michael Island, Alaska, with all contiguous land

and islands within one hundred miles of the location of the flagstaff of the present garrison on that island, is set aside from the public lands of the Territory of Alaska and declared a military reservation.

"Parties who have, prior to the receipt of this order, located and erected buildings on the land so reserved, will not be disturbed in their use of lands, buildings and improvements, nor in the erection of structures needed for their business or residence.

"2. The military reservation above declared, and the military post located thereon, will be known as *Fort St. Michael*, and will be under the control and supervision of the commanding officer of the troops there stationed.

"R. A. ALGER,

"*Secretary of War.*"

Captain P. H. Ray has also selected a military reservation, ten miles square, at the mouth of the Tanana River, and posted the same.*

No important effort at exploration, and no information concerning the interior further than that gained from accounts by natives and prospectors, was obtained until the spring of 1883, when Brigadier-General (now Major-General) Nelson A. Miles, commanding the Department of the Columbia, ordered his aide-de-camp, Lieutenant F. Schwatka, Third Cavalry, to Alaska to make a military reconnaissance of the Territory. Lieutenant Schwatka, with his party, seven in all, left Portland, Oregon, May 22, 1883, and proceeded by steamer to the Alexander Archipelago, where a couple of weeks were spent in becoming acquainted with the various bands of Thlinket Indians, who inhabit the islands and coast. They then ascended to Dyea Inlet, crossed over

*Letter to the Secretary of War, September 15, 1897.

the Chilkoot Pass June 10th, and traveled from its headwaters down the Yukon to its mouth, where they arrived the latter part of August. A week was spent at St. Michael. Upon the return trip the Aleutian Islands were visited, and the journey continued to San Francisco, arriving there October 5th. Lieutenant Schwatka's report, with maps and illustrations, was published as United States Senate Executive Document No. 2, Second Session, Forty-eighth Congress.

In 1884 Lieutenant (now Captain) W. R. Abercrombie, Second United States Infantry, conducted an exploring expedition in the region of the Copper River and the coast and adjacent islands, as far as the 147th meridian.

In 1885 Lieutenant Henry T. Allen, Second United States Cavalry, commanded an exploring expedition which traveled the region of the Copper, Tanana and Koyukuk Rivers. His interesting illustrated report, with maps of the country over which he traveled, was published as Senate Executive Document No. 125, Second Session, Forty-ninth Congress.



CHAPTER IV.

CLIMATE.

"For hot, cold, moist and dry, four champions fierce, strive here for mastery."—*Milton*.

With reference to climate, Alaska may be separated into two divisions: the one, Southern Alaska, embracing the sea-coast below St. Michael and the various outlying islands; the other including all the Territory to the north and beyond the coast range of mountains.

The climate in the southern portion of Alaska is mild and moist; said to be due to the warm Japanese current which sweeps the western coast—one branch entering Behring Sea and preventing the southern flow of ice and the other bringing to the southeastern portion of the coast a moisture-laden atmosphere, responsible for the great annual rainfall there and on the neighboring islands. From the report of Mr. Ivan Petroff, special United States Agent for the Tenth Census, it is learned that observations on the Aleutian Islands by the missionary Veniaminof, covering a period of more than seven years, showed 53 clear days, 1,263 rainy days and 1,230 days of rain, snow or hail. The same authority, speaking of the Kadiak neighborhood, says that observations covering a period of fifty years showed a minimum temperature of -4 degrees and a maximum of $+84$ degrees—certainly very moderate extremes: the rain-fall for the same period averaged 80 inches per

year, and several years the rain-fall exceeded 90 inches, and once reached 103 inches for a single year; the average number of rainy days per year was 165 and of snow 33, but several years the number of rainy days reached 250, and once 264; the highest number of snowy days for any year was 44.

Speaking of the temperature of St. Michael Island and vicinity, Mr. Petroff quotes from E. W. Nelson's report in 1880 to the Chief Signal Officer of the Army, as follows:

"During the past four years the first mush ice has begun to form in the bays from the 15th to the 18th of October, and the bays have been frozen so as to bear a man from the 25th to the 28th of October, with the exception of the year 1878, when a strong wind took the ice out, and it did not freeze again until the 10th of November. Up to the 15th of October vessels could enter here without danger of meeting ice. In the spring much more uncertainty exists, as to a great extent the date of open water depends upon what the prevailing winds may be. Long-continued north winds, following a severe winter, as in 1880, may keep the ice barrier in until the 20th of June, and it has even remained until nearly the first of July; but these late dates are exceptional. As a rule, the ice will be thoroughly broken up and a strong vessel may enter Norton Sound through the ice by the 10th of June. Between the 20th of June and the 1st of July may be called safe dates for any vessel except in an unusual season, as during a large part of June fine weather prevails.

"As in most other places under high latitudes, there is no long gradation from season to season, but instead we have two well marked periods—a long winter of about

seven months, extending from October until well into May, and five months of summer. The winter is by far the best, as there are long periods of beautifully clear days, which are welcomed in spite of the usually accompanying intense cold. The summer is rendered very disagreeable by a large number of cold, misty rains, and the low, overhanging stratum, which appears to shut down all about like a leaden covering."

In the other division of the Territory, across the coast range of mountains, including the Upper Yukon Basin where the present well-known gold-fields exist, very different climatic conditions prevail. In this division the air is dry and clear. There is but little rain in the summer and the snow-fall in winter does not usually exceed two feet in the vicinity of Fort Cudahy, though it is as much as twenty feet along the coast, where the effect of the Japanese current is felt.

The extremes of temperature, however, are very great, ranging, if reports of returned miners are accepted, from -72 in winter to $+112$ degrees in summer. In winter the air is filled with frozen particles like frost, which, continually falling, keep the surface of the ground covered with a light, feathery coating of snow, and Mr. Harry De Windt, the explorer, reports ice 13 feet thick on the Yukon River.

In the northern portion of the Territory, and indeed sometimes (though rarely) as far south as Dyea and Juneau, there occurs at irregular intervals, a storm of peculiar violence, known locally as the "takou" (taku); the storm usually continues for a half hour or more, during which the wind blows with terrifically destructive force, always from the mountains toward the sea, and may be accompanied by blinding snow or sleet. The takou is

well known to the inhabitants of the North, where it is dreaded more than is the blizzard or the cyclone in the regions of their wrath.

A report recently prepared by Chief Willis L. Moore, of the United States Weather Bureau, on the climate of Alaska, is as follows:

"The general conception of Alaskan climate is largely due to those who go down to the sea in ships, and this is not strange when we consider the vast extent of shore line—over 26,000 miles, possessed by that Territory. The climate of the coast and the interior are unlike in many respects, and the differences are intensified in this, as perhaps in few other countries, by exceptional physical conditions. The natural contrast between land and sea is here tremendously increased by the current of warm water that impinges on the coast of British Columbia, one branch flowing northward toward Sitka and thence westward to the Kadiak and Shumagin Islands.

"The fringe of islands that separates the mainland from the Pacific Ocean from Dixon Sound northward, and also a strip of the mainland for possibly twenty miles back from the sea, following the sweep of the coast, as it curves to the northwestward, to the western extremity of Alaska, form a distinct climate division, which may be termed temperate Alaska. The temperature rarely falls to zero; winter does not set in until December 1st, and by the last of May the snow has disappeared except in the mountains. The mean winter temperature of Sitka is 32.5 degrees, but little less than that of Washington, D. C. While Sitka is fully exposed to the sea influences, places farther inland, but not over the coast range of mountains, as Killisnoo and Juneau,

have also mild temperatures throughout the winter months. The temperature changes from month to month in temperate Alaska are small, not exceeding twenty-five degrees from mid-winter to mid-summer. The average temperature of July, the warmest month of summer, rarely reaches fifty-five degrees, and the highest temperature of a single day seldom reaches seventy-five degrees.

"The rain-fall of temperate Alaska is notorious the world over, not only as regards the quantity that falls, but also as to the manner of its falling—viz., in long and incessant rains and drizzles. Cloud and fog naturally abound, there being on an average but 66 clear days in the year.

"Alaska is a land of striking contrasts, both in climate as well as topography. When the sun shines, the atmosphere is remarkably clear; the scenic effects are magnificent; all nature seems to be in holiday attire. But the scene may change very quickly: the sky becomes overcast; the winds increase in force; rain begins to fall; the evergreens sigh ominously, and utter desolation and loneliness prevail.

"North of the Aleutian Islands the coast climate becomes more rigorous in winter, but in summer the difference is much less marked. Thus, at St. Michael, a short distance north of the mouth of the Yukon, the mean summer temperature is fifty degrees, but four degrees cooler than Sitka. The mean summer temperature of Point Barrow, the most northerly point in the United States, is 36.8 degrees, but four-tenths of a degree less than the temperature of the air flowing across the summit of Pike's Peak, Colorado.

"The rain-fall of the coast region north of the Yu-

kon Delta is small, diminishing to less than ten inches within the Arctic Circle.

"The climate of the interior, including in that designation practically all of the country except a narrow fringe of coastal margin and the territory before referred to as temperate Alaska, is one of extreme rigor in winter, with a brief but relatively hot summer, especially when the sky is free from clouds.

"In the Klondike region in mid-winter the sun rises from 9:30 to 10 a. m. and sets from 2 to 3 p. m., the total length of daylight being about four hours. Remembering that the sun rises but a few degrees above the horizon, and that it is wholly obscured on a great many days, the character of the winter months may easily be imagined.

"We are indebted to the United States Coast and Geodetic Survey for a series of six month's observations on the Yukon, not far from the site of the present gold discoveries. The observations were made with standard instruments and are wholly reliable. The mean temperature of the months October, 1889, to April, 1890, both inclusive, are as follows: October, 33 degrees; November, 8 degrees; December, 11 degrees below zero; January, 17 degrees below zero; February, 15 degrees below zero; March, 6 degrees above zero; April, 20 degrees above. The daily mean temperature fell and remained below the freezing point (32) from November 4, 1889, to April 21, 1890, thus giving 168 days as the length of the closed season of 1889-90, assuming the outdoor operations are controlled by temperature only.

"The lowest temperatures registered during the winter were: 32 degrees below zero in November, 47 degrees below in December, 59 below in January, 55 below in February, 45 below in March, 26 below in April.



TAIYA INLET (Looking toward Chilkooot Pass).



HEADWATERS TAIYA INLET.

"The greatest continuous cold occurred in February, 1890, when the daily mean for five consecutive days was 47 degrees below zero. The weather moderated slightly about the first of March, but the temperature still remained below the freezing point. Generally cloudy weather prevailed, there being but three consecutive days in any month with clear weather during the whole winter. Snow fell on about one-third of the days in winter and a less number in the early spring and late fall months.

"Greater cold than that here noted has been experienced in the United States for a very short time, but never has it continued so very cold for so long a time. In the interior of Alaska the winter sets in as early as September, when snow-storms may be expected in the mountains and passes. Headway during one of these storms is impossible, and the traveler who is overtaken by one of them is indeed fortunate if he escapes with his life. Snow-storms of great severity may occur in any month from September to May, inclusive.

"The changes of temperature from winter to summer are rapid, owing to the great increase in the length of the day. In May the sun rises at about 3 a. m. and sets about 9 p. m. In June it rises about 1:30 in the morning and sets at 10:30, giving about twenty hours of daylight, and diffused twilight the remainder of the time.

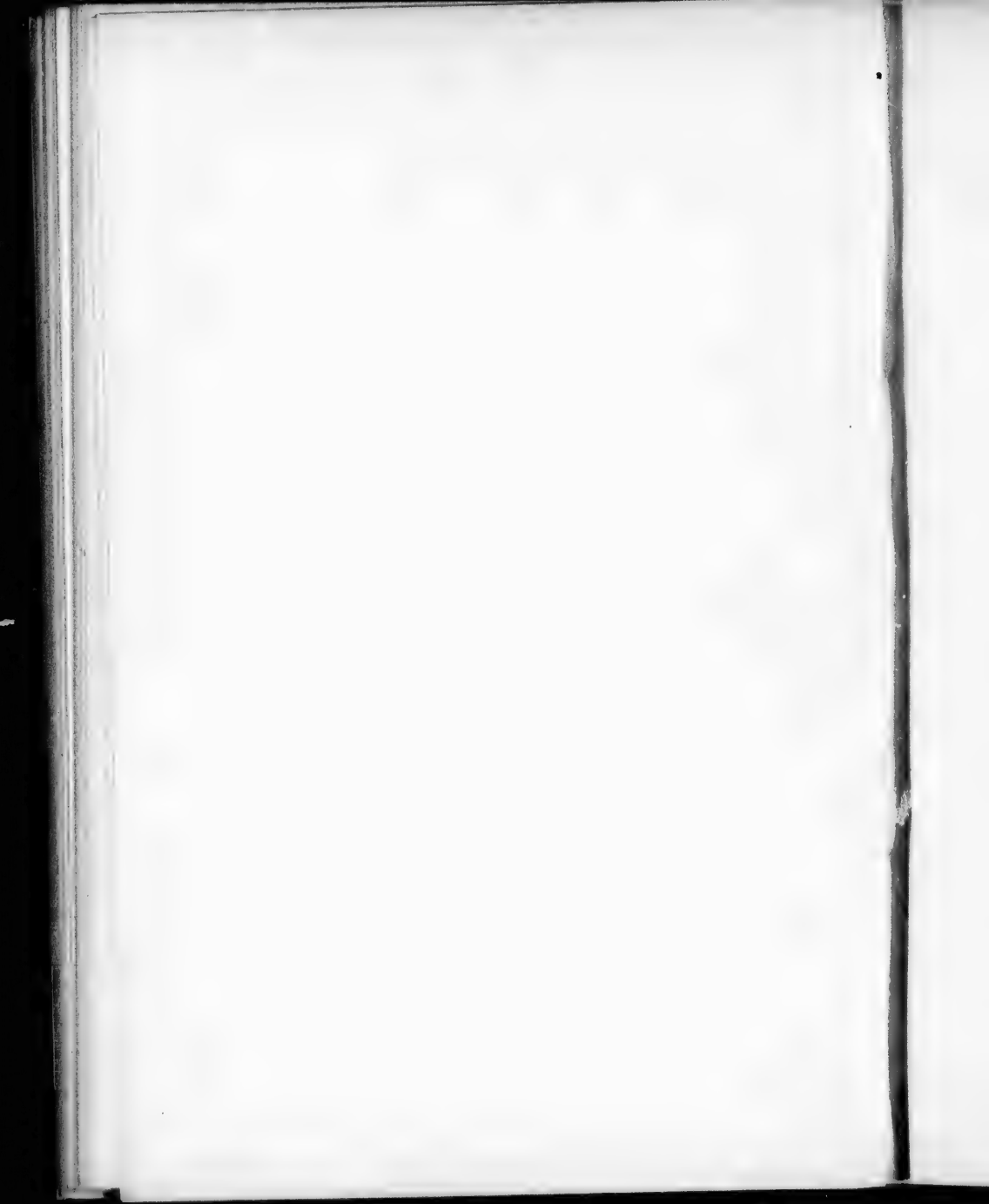
"The mean summer temperature of the interior doubtless ranges between 60 and 70 degrees, according to elevation, being highest in the middle and lower Yukon valleys."

As a natural result of these climatic conditions the warm weather brings myriads of mosquitoes, the larvæ

of which are deposited in the damp moss which everywhere covers the ground; there they remain protected during the severity of the winter, and as soon as the snow melts the vicious insects are released. Mr. Petroff, speaking especially of the Kuskokwim region, though the same complaint is made by travelers from all sections of the Territory, says:

"There is a feature in this country which, though insignificant to a traveler, is to the traveler the most terrible and painful infliction he can be called upon to bear in a new land. I refer to the clouds of blood-thirsty mosquitoes, accompanied by a vindictive ally in the shape of a small, poisonous black fly, under the stress of whose persecution the strongest man with the firmest will must either feel depressed or succumb to low fever. They hold their carnival of human torment from the first growing of spring vegetation in May until it is withered by frosts late in September. Breeding here as they do in the vast net-work of slough and swamp, they are able to rally around and to infest the wake and the progress of the explorer beyond all adequate description, and language is simply unable to portray the misery and annoyance accompanying their presence. It will naturally be asked, How do the natives bear this? They, too, are annoyed and suffer, but it should be borne in mind that their bodies are anointed with rancid oil and certain ammoniacal vapors peculiar to their garments from constant wear have a repellant power which even the mosquitoes, blood-thirsty and cruel as they are, are hardly equal to meet. When traveling, the natives are, however, glad enough to seize upon any piece of mosquito net, no matter how small, and usually they have to wrap cloths or skins about their heads

and wear mittens in mid-summer. The traveler who exposes his bare eyes or face here loses his natural appearance; his eyelids swell up and close and his face becomes one mass of lumps and fiery pimples. Mosquitoes torture the Indian dogs to death, especially if one of these animals, by mange or otherwise, loses an inconsiderable portion of his thick, hairy covering, and even drive the bear and the deer into the water."



CHAPTER V.

INHABITANTS, POPULATION AND
GOVERNMENT.

The inhabitants of Alaska are, for the greater part, natives. Many have become semi-civilized, while others still cling strictly to their original modes of living and tribal customs. Mission schools here and there, as well as others conducted by the traders, have been long established, and some have produced expert copyists, clerks and bookkeepers. Natives are found who speak Russian or a few words of English, but ordinarily, beyond that, with the exception of the Chimmesyan, their education has not advanced.

The confusion in geographical names referred to exists from the same causes to even a greater extent in the designation of native tribes and no two reports agree either in spelling or classification.

In 1879 there was a threatened outbreak of Indians, but it soon subsided; since then the natives have generally shown a friendly disposition toward the whites, though it must be borne in mind that contact has not been frequent and their good will has usually been secured by remunerative employment and bestowal of gifts. * In all dealings with them a thoroughly understood bargain should be negotiated through a reliable and competent interpreter and contact with them in all cases should be characterized by generosity and

forbearance, ever remembering that they are untutored savages, ignorant of statute law and the white man's ways.

Before the cession of the Territory to the United States several estimates of the population had been made. The report by the Missionary Priest Veniaminoff in 1839 included the inhabitants of all the country now called Alaska, and says :

"The northwestern part of America from Behring Strait to the meridian of Mount Saint Elias, or 141° west of Greenwich, and all the islands situated along the coast of America farther to the eastward, and a portion of the mainland to a distance of 50 versts from the sea-shore down to longitude 130° and latitude 50° , belongs to Russia and is bounded in the east by the British Possessions. Our America is peopled with a multitude of tribes and races, the number of which is, of course, unknown to us; but as far as the names of tribes in our part of America have been ascertained, they are as follows :

- 1.—The Kolosh, inhabiting the islands and the narrow strip of the American continent at the extreme southeastern limits of the Russian Possessions, whose number is now about . . . 5,000
- 2.—The Oughalentze, living near Mount Saint Elias, numbering not more than . . . 150
- 3.—The Mednovtze, who live on Copper River, to the number of . . . 300
- 4.—The Kolchane, living far away in the interior of the continent near our boundaries; their number is unknown . . .
- 5.—The Chugach, living on the gulf of the same name, numbering now . . . 471
- 6.—The Kenaitze, living on the shores of the Gulf of Kenai, numbering . . . 1,628

- 7.—The inhabitants of the southern shore of the Aliaska Peninsula, numbering.....1,600
 - 8.—The Aglemute, on the northern shore of the Aliaska Peninsula, numbering..... 402
 - 9.—The Kadiaks or Koniagi, living on the island of Kadiak, numbering.....1,508
 - 10.—The Oonalashkans or Aleuts, inhabiting the Fox Islands and a portion of the Aliaska Peninsula, numbering.....1,497
 - 11.—The Atkhans or Atkha Aleuts, inhabiting the Andreieanof Islands, numbering..... 750
 - 12.—The Kuskokvims, living on the river Kuskokvim, which empties into Behring Sea, numbering about.....7,000
 - 13.—The Kvikhpaks, Kiatentze, Malegmute and other tribes inhabiting the shores of Behring Sea and the rivers emptying into the same, and also the coast of the Northern Ocean, whose number cannot be less than all those above mentioned together.....
- To this native population of Russian America we must add Russians living in the various settlements to the number of..... 706
- Creoles, that is offspring of Russians from native American mothers, who form the foundation for a class of American citizens of Russia, numbering.....1,295

22,307

Consequently, our total population in America may be given as follows:

Known and counted.....	10,313
Known but not counted.....	12,500
Estimated only.....	17,000

Making a total of.....39,813

A special inspector of the Imperial Russian Government, Kostlivtsov, reported the population of Russian America January 1, 1863, to be:

<i>Tribes.</i>	<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
Creoles.....	925.....	971	1,896
Aleut	1,236	1,192	2,428
Kenartze.....	430.....	507	937
Kadiaks	1,115.....	1,102	2,217
Chugach.....	226.....	230.....	456
Totals.....	3,992	4,002	*7,934

To this Kostlivtsov added an estimate of Anahs
and Copper River natives..... 2,500
And Kolosh or Thlinkets..... 20,000

Making a total of..... 30,434

If the difference in classification be neglected, this is sufficiently like the results of Veniaminoff's work in 1839 to give confidence in the approximate accuracy of both. A considerable reduction in the population after Veniaminoff's report might be traced to the ravages of small-pox, which broke out in 1836, and raged for a year after his work was completed.

No better information than the foregoing existed concerning the Alaskan population when the Territory was purchased of Russia, and at that time three years were given, by the terms of the treaty, to the inhabitants, in which to remove to Russia or become subjects of the United States.

Our Government made no effort at enumeration until 1880, when Mr. Ivan Petroff reported the population as follows:

*This is 2,191 less than the Russian-American Company's total for the same year, but the Russians and Northern natives were omitted.

Whites.....	430
Creoles.....	1,756
Eskimo.....	17,617
Aleut.....	2,145
Athabaskan.....	3,927
Thlinket.....	6,763
Total.....	33,426

The census of 1890 is as follows:

Whites.....	4,298
Indians.....	23,531
Mongolians.....	2,288
Mixed blood.....	1,935
Total.....	32,052

Or about one inhabitant to 18 square miles of Territory.

There are six principal divisions or nations of the aboriginal inhabitants: The Eskimo (Innuited); the Thlinket (Kolosh); the Athabaskan (Tinneh); the Aleut* (Oonagan); the Chimmesyan and the Skittagaten (Haida). There are many tribes and subdivisions.

The Eskimo, numerically the strongest (about 13,000), are the predominating native element and occupy the coast country from Point Barrow to the mouth of the Copper River; a few scattered bands have been seen east of Point Barrow.

The Eskimo are a peaceful, inoffensive people, strong and hardy by nature, and though of low mental development, show considerable adaptability to civilization. They have had comparatively little contact with the whites, who, however, credit them with being, as a

*Some ethnologists class the Aleuts as Eskimo, thus reducing the number of separate nations to five.

rule, fair and honest in their dealings. They subsist almost entirely upon sea food and preserve their native customs and dress. Of the Eskimo there are twenty-five separate tribes, as follows:

The *Nuwukmiut* (143)*; extending from Dease Inlet about 50 miles westward, with their principal village at Point Barrow.

The *Utkeagvik* (193); joining the Nuwukmiut on the west and extending to the 158th meridian.

The *Sidarli* (47); a very small tribe residing along the coast from the 158th meridian to the mouth of the Koo.

The *Utuka* (48) and the *Kukpaurungmiut* (52); occupying the coast for about 100 miles west of the Koo.

The *Tikera* (about 300); occupy the peninsula between capes Beaufort and Lisburne. Their principal village is Initkilly, where the coal mines, operated by Americans, give employment to many of this tribe.

The *Nunatogmiut* and *Kuangmiut* (123) (the *Kopagmiut* of Mr. Dall); live along Kotzebue Sound and rivers emptying into it.

The *Mahlemiut* (630); reside along Kotzebue Sound.

The *Kinegan* (652); scattered along the coast of Behring Strait. This tribe is well known to whalers and tradesmen.

The *Kaviagmiut* (427); occupy the peninsula between Kotzebue and Norton Sounds.

The *Umudjek* (267); reside on St. Lawrence Island, though in habits, customs and dress are identical with the inhabitants of the coast and interior of Siberia.

*The numbers in parentheses refer to population, and are taken from the census of 1890.

The <i>Ukivakmiut</i> (200)	} These are all members of the once powerful Mahlemiut tribe. They occupy Univak Island, the northern and eastern shore of Norton Sound; the Chnagmiut occupy the mouth of the Yukon and banks of that stream as far as Rasboinik on the south and Andreafsky on the north.
The <i>Kaviagmiut</i> (427)	
The <i>Unaligmiut</i> (110)	
The <i>Chnagmiut</i> (621)	
The <i>Mahlemiut</i> (630)	

The *Kwikhpagmiut* or *Ikogmiut* (172); live on the banks of the Yukon from Andreafsky to the mouth of the Chageluk.

The *Maglemiut* (2,147); these people inhabit the country embraced in the deltas of the Yukon and Kuskokwim rivers and the region between these streams.

The *Nunivagmiut* (702); inhabit Nunivak Island.

The *Kuskwogmiut*, (3,287); these, the largest of the Eskimo families, are thickly scattered along the shore of Bristol Bay from Cape Avinof to the mouth of the Kvichavak River.

The *Togiagmiut* (200); occupy the basin and lake system of the Togiak River.

The *Kiatagmiut* (214); occupy the interior region of the Kvichavak River.

The *Aglemiut* (767); live on the northern shore of the Alaskan Peninsula, from the head of Bristol Bay and as far west as Unangashik. This being the region occupied by some of the largest canneries and trading posts, many of this tribe find employment.

The *Kaniagmiut* (1,154); occupy the Kenai Peninsula and Kadiak Islands.

The *Chugachigmiut* (433); inhabit the shores and islands of Prince William Sound.

The Thlinket (Kolosh) is the second family in numerical strength, (about 5,000) though perhaps first in commercial importance, as they are already well known to American traders, and come more in contact with miners and travelers than any of the others.

They occupy the coast and most of the islands from the mouth of Copper River to the southern extremity of Alaska. They are a brave and hardy people, and are said to be industrious and zealous workers. Contact with the whites has materially modified their mode of life in many respects, and considerable progress has been made in rudimentary education. They have slaves, but the freedom of the latter is almost equal to that of their owners. There are thirteen tribes of the Thlinket nation:

The *Ugaleuts* (154); extend from Copper River to Controller Bay.

The *Yaktag* (82); are just south of the Ugaleuts.

The *Yakutat* (350); occupy the coast as far as Lituya Bay.

The *Chilkats* (812); this is one of the most powerful of the Thlinket tribes, and occupies the country about the Lynn Canal, including Dyea. They have for years acted as middlemen between the traders and the natives of the interior, and have managed to gather considerable property. These are the natives who will be met at Dyea and Skagway engaged in packing freight over the mountain passes.

The *Huna* (about 600); inhabit Chichagof Island.

The *Auks* (about 300); live on Admiralty and Douglas Islands, and are also to be found in Juneau.

The *Taku* (225) and *Hutznahu* (about 500); have their settlements as far south as Holkhan Bay and the southern portion of Admiralty Islands.

The *Sitka-Kwan* (814); the largest and most civilized tribe of the Thlinket, occupy Baranof Island, and individuals are to be found everywhere in South-eastern Alaska.

The *Kakey* (234); are on the island of the same name.

The *Stikeeny* or *Stikine* (300); inhabit Wrangell and Etholin Islands, and a few families are on the mainland at the mouth of the Stikine River, where they engage in taking freight across the mountain passes.

The *Tongass* (255); occupy the southern extremity of the Territory.

The *Hanegas* (about 300); are to be found in the northern part of Prince of Wales Island.

These divisions are not marked and there is but little tribal cohesion. The entire Thlinket nation is divided into two clans, the Wolf and the Raven, and a member of one clan must marry a member of the other.

The Thlinket is said to occupy a very low moral plane, and to have no conception of the truth. They are addicted to liquor, and both sexes use tobacco to excess.

The third family in numerical strength (about 2,900), the Athabaskans, (called also the Tinneh* and the Ingaliks†) occupy the interior along the Yukon and its tributaries to about the mouth of the Tanana. They include several tribes of the North American Indians, who are scattered from the Rio Grande to the Arctic Ocean. It is with difficulty that they manage to live by

*Dall.

†Petroff.

hunting and fishing in the streams. These Indians speak a dialect known to the missionaries as Tukudh (Takuth), but with travelers they converse in a jargon of Canadian French and English, similar to the Chinook of Southeastern Alaska, Oregon and Washington. They are sometimes referred to as the Stick or Forest Indians. Since the establishment of mining camps in the Yukon country their intercourse with the whites has increased, but not sufficiently to have any perceptible influence towards civilization, except in the use of cooking utensils and food procured from traders. They are a strong healthy people, and inclined to be honest and trustworthy.

The Athabaskans are the only inhabitants of Alaska who under the law are classed as Indians. All the other natives are subject to taxation, may sue in the courts and be sued.*

There are five tribes of Athabaskans:

The *Kuchin* (580); include a number of roving tribes who occupy the upper Yukon and Porcupine country.

The *Ingalik* (about 900); inhabit the banks of the Yukon from Nulato to Kozerevsky.

The *Kuilchana* (about 300); is a roving band liable to be seen anywhere in Central Alaska from the headwaters of the Kuskokwim River in the south to the Chageluk and Innoko in the north.

The *Kenai* or *Tnaina* (about 1,000); are found near the shores of Cook's Inlet and on the Sushitna and Kinik rivers and the neighboring lakes.

*See United States Circuit Court, District of Oregon, May 1, 1896.—*Federal Reporter*, Volume 27, page 351.

The *Atna*, better known as the "Copper River Indians" (142); lead a nomadic life in the region of Copper River, going sometimes as far as the headwaters of the Yukon.

The fourth nation in numerical strength (about 1,000), the Aleut (as before said, sometimes classed as Eskimo), inhabit the northern portion of the Alaskan Peninsula and all the islands of the Aleutian chain. They are rapidly losing their native individuality and show in many ways the effect of Russian influence; they speak Russian, belong to the Russian Orthodox Church (Greek-Catholic), and have grown in physical appearance to resemble that people.

They are kindly disposed and gentle, though through immoral practices have become diseased and physically weakened.

The Chimmesyan or Tsimpseans (about 1,000), the fifth of the Alaskan nations, have taken up their residence in that Territory since its purchase from Russia. They came from British Columbia, under the influence of an English missionary named Duncan, in 1887, and settled on Annette Island (near the mouth of Portland Channel), and in 1891 Congress set aside that island as a permanent home for them.* The members of this nation are far advanced in civilization and are regarded by neighboring tribes as a superior people. They have laid out the town of Port Chester, with its schools, churches, stores, etc. The town is one of the industrial centers of Alaska and has a large cannery, steam saw-mill and various shops. Almost the entire population speak English and have the customs, manners and dress of the whites. Among them are to be found skilled musicians and eloquent orators.

*Act of March 3, 1891.

The Skittagetan or Haida (about 400), the last and smallest of the native nations, are a vigorous, healthy people, inhabiting the southern half of Prince of Wales Island. They live in a semi-civilized manner as regards their houses, furniture and cooking. They are inveterate gamblers, practice polygamy, hold slaves, and are altogether without moral principles.*

Detailed descriptions of these nations, with interesting accounts of their modes of life, customs, dress and occupations, are given by Mr. Petroff ("Population and Resources of Alaska"), Dr. Geo. F. Wilson, United States Army, who accompanied Lieutenant Schwatka in 1883, and by Mr. Dall, in "Alaska and Its Resources."

Governor John G. Brady, of Alaska, in his last annual report, estimates the population at 30,000 natives and 10,000 whites. The white population is scattered over the Territory, gathered at the various trading-posts and in the mining-camps. It has materially increased within the last year, and a large influx of prospectors, miners and traders may be expected to follow the verified reports of the rich gold deposits located within the Territory.

There was no Territorial Government established until 1884, when Congress made provision for a civil government for Alaska, and James H. Kinkead, the first Governor of the Territory, was appointed. He was succeeded in 1885 by Governor Alfred P. Swineford, who held office until 1889, when Lyman E. Knapp was installed as Governor. Governor Knapp was followed in office by James Sheakly, who remained Chief Executive of the Territory until 1897, when the present Governor,

*Report on Education in Alaska, 1896



ABERCROMBIE CANYON.



NORTHERN PART OF CHILD'S GLACIER.

John G. Brady, was appointed.* No special laws have been enacted for the government of Alaska, but the laws of Oregon are applicable in the Territory. There is a district court which sits alternately at Sitka and Wrangell. There is a land office at Sitka, and Mr. Herman, Commissioner of the United States General Land Office, has stated that the mineral land laws of the United States, the town-site laws (providing for the incorporation of town sites and acquirement of title thereto from the Government to the trustee) and the law providing for trade and manufactures, giving each qualified person 160 acres of land in a square and compact form, are applicable to Alaska. The coal land regulations and the public land laws do not extend to Alaska, as the Territory is expressly excluded by the laws themselves from their operation.

The patenting of mineral lands in Alaska has been going on since 1884.

The mining laws of the United States and of Canada are to be found in an Appendix.

*NOTE.—The other federal officers are: a clerk of the court, who is *ex-officio* Secretary of Alaska; a surveyor-general; a register of the land office; a receiver of public moneys and a United States Commissioner at Sitka. At Sitka also are: a district judge, United States Attorney and Assistant United States Attorney and a United States Marshal. There are United States Commissioners at Wrangell, Juneau, Unalaska, Kadiak, Circle City, St. Michael, Dyea and Unga.

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CHAPTER VI.

RESOURCES AND INDUSTRIES.

"The earth yields wealth: from out the earth come forth riches."

The resources of Alaska are but slightly known, and its industries are in their infancy. The fur and fish industries have been carried on with profit for a considerable period of time. Efforts at agriculture, with varying success, have been made since its colonization by the Russians. Deposits of minerals, notably gold, silver, copper, lead, iron, coal and oil, are known to exist, and dense forests of valuable timber are found in many portions of the Territory. The obstacles to development have not depended so much upon the climate, which is less rigorous than generally supposed, as upon the remoteness of the Territory from the markets of the world and the lack of transportation facilities. Now that the discovery of gold in large quantities has hastened immigration in its direction, with the result of largely increased transportation and a better knowledge of the country, the resources of Alaska will offer inviting fields for the investment of capital and the employment of labor.

About the middle of the eighteenth century the Russians, attracted by the possibilities of profit in the fur

traffic, began the establishment of trading-posts in the Territory where the fur-bearing animals were numerous and were taken in large numbers by the natives. In 1786 the discovery, by Captain Pribylof, of the great fur seal haunts on the islands which now bear his name, gave such great impetus to the fur industry that it occupied the attention of the Imperial Government, resulting in the provision of regulations, which, for a period, limited the annual catch of fur seals to from 30,000 to 40,000, with certain protection to females and their young. Afterwards, the number permitted to be taken was increased to from 50,000 to 70,000.

After the cession of the Territory to the United States, our Government, for a consideration of \$60,000 per year, and a small royalty on each animal taken, leased the privilege of the seal islands, and limited the annual catch to 100,000. This continued until 1890, when a new lease was made, which stipulated that the annual catch should not exceed 100,000, and empowered the Secretary of the Treasury to make regulations, from time to time, governing the number that might be taken. In the meantime, pelagic sealing (taking seals in the water) had grown to such an extent as to threaten the extermination of the animals, and involved so many interests, that the question became the subject of international controversy, resulting in an agreement between the United States and Great Britain that the annual catch on land for the years 1891-2-3 be limited to 7,500, and pelagic sealing was prohibited in Behring Sea. In 1894 regulations were adopted by the Paris Tribunal of Arbitration prohibiting pelagic sealing from the 1st of May to the 1st of July, both inclusive, each year; and

under regulations prescribed by the Secretary of the Treasury, the annual land catch has been limited as follows: in 1894 and 1895, to 15,000 each year; in 1896, to 30,000, and in 1897, to 21,000.

In addition to the fur of the seal may be named as commercially valuable those of the sea otter, the land otter, the beaver, the silver fox, the blue fox, the mink, the wolf, the marten, the squirrel and the muskrat. The skins of the black and the brown bear are also met with.

Referring to the agricultural resources of Alaska, Mr. Petroff says that "it has been settled by experiment that cereal crops cannot be grown, nor can the fruits common in the United States be cultivated with success, unless it be the strawberry and cranberry," and, continuing, he says:

"Taking up the subject of the vegetable garden, it is found that there are localities in Alaska where, for the last eighty years, or even more, up to the present date, good potatoes have been raised, though I should say, perhaps, that the raising of these tubers is not a certain success year after year, except at one or two points within the Alexander Archipelago, namely, at the mouth of the Stakhin* River, at Fort Wrangell and on Prince of Wales Island. The potato grounds of Alaska, however, can, with due care and diligence, be made to furnish in the Alexander Archipelago, in Cook Inlet, at Kadiak Island and inlets contiguous, and at Bristol Bay, a positive source of food supply to the inhabitants. It is not generally known that on Afognak Island there are nearly 100 acres of land, dug up in patches here and there,

*Stikine.

which are planted by the inhabitants, and from which they gather an annual harvest of potatoes and turnips; but there are no fields spread out, squared up and plowed anywhere in Alaska. The little openings in the forest, or the cleared sides of a gently sloping declivity, in sheltered situations, are taken up by the people, who turn out with rude spades, of their own manufacture principally, for the purpose of subjugating and overturning the sod. Many of the gardens, noticeably those at the Kadiak village, are close by the settlement, while others are at some distance.

"The potato crop at Kadiak in 1880 was a total failure, and this happens at intervals of from four to six years. The winter preceding the planting in 1880 was an unusually cold and protracted one, and the season, short at the best, was cut off by unwonted early frosts during September and the latter part of August. The usual growing season, however, opens early in June, from the 1st to the 10th, and the potatoes are planted in May, coming up and growing freely until October, when they are harvested. This growth of potatoes, fairly established and well-defined, presents the only firm and tangible evidence of agricultural capacity within the limits of Alaska. The turnip grows and flourishes wherever the potato succeeds."

Mr. Petroff comes to the conclusion that, although Alaska will not support any considerable agricultural population, it is apparent that the condition of those who reside in the Territory, engaged in other industries, will be much improved by better attention to the development of the latent resources of the soil.

The Secretary of Agriculture, under date of January 16, 1898, makes the following statement:

"Alaska is destined to become a great agricultural field, if it is developed properly. The conditions which exist there are paralleled by the conditions in Northern Scotland, which produces a rugged race which has ever been the mainstay of the British Navy. I believe that before many years the men who are raised in the rugged climate of Alaska, on such food products as can be cultivated in that climate, will be the hardiest, healthiest and most fearless and bravest of all the American people, and that they will be the bone and sinew of the American Navy on the Pacific coast.

"The soil of Southern Alaska along the coast is rich and best suited for barley and oats, the food on which the Northern Scotchman thrives. Fish will be an important article of the Alaskan's diet, and thus the race will become a seafaring one, well suited for the United States Navy. If we send to the people now living there commissioners who can teach them in a practical manner how to raise these and other foods profitably, I believe the country will develop rapidly. Grass is abundant, and can be easily cultivated further, and by a special process we can teach the Alaskans how to make hay, even in the worst kind of Alaskan climate, when it rains a little every day. We would introduce whatever vegetables could be successfully cultivated, and make the best use of the soil now so rich already.

"The winters need not be especially hard, for food will be abundant in the summer, and can be easily stored away for winter consumption. In barley alone a tre-

mendous traffic could be built. More than enough barley to feed a greater population than is probable in a number of years to come can be successfully raised, and that is a grain for which there is a constant market. I repeat it, Alaska's agricultural possibilities will yield her more money than will ever be taken out of the gold mines.

"Congress, in 1887, appropriated \$15,000 for the purpose of establishing an agricultural experiment station in every State and Territory. This was never extended to Alaska, and a special act of Congress has been asked by the Department of Agriculture to set aside \$15,000 for the purpose of increasing the agricultural possibilities of that Territory. The department does not contemplate establishing an experiment station, but asks that Congress give the authority to expend the money in introducing various plants and grains best suited to the climate, and in sending a corps of specialists to Alaska to introduce the plants and educate the people in their use.

"JAMES WILSON,

"Secretary of Agriculture."

(*The Washington Post*, January 16, 1898.)

Mr. Joseph Ladue, speaking of Dawson City and vicinity, which, owing to the similar conditions existing, might apply throughout the Yukon country, is quoted as saying :

"Grain is sown May 15th, and barley and oats have been grown for the past two years in the vicinity; potatoes will not mature at Dawson."

In summer there is an abundance of grass about Dawson City, and barley has been raised in small quantities in the vicinity of Forty-Mile Creek.

As to the conditions governing agriculture in the vicinity of Sitka, Captain Beardsley, United States Navy, says (Reports on Affairs in Alaska, Senate Executive Document No. 71, Forty-seventh Congress, First Session, page 125):

"Whether it be due to the change of climate through the clearing away of many acres of forest, or to improved methods, I cannot say, but for several years past excellent vegetables, such as potatoes, cabbages, etc., have been raised yearly in the neighborhood of Sitka and Wrangell. Near Sitka there are a large number of plots under cultivation. I have seen, two seasons in succession, lettuce of several varieties; cabbages a yard across before they began to head, and eight to ten inches in diameter headed; cauliflower weighing ten to fifteen pounds; Early Rose and Peachblow potatoes ranging from three to thirty ounces each, and each hill yielding over half a bucketful; turnips of very large size, and cress, radishes, etc., in profusion; green peas of excellent quality, and beds bordered by gooseberries and currant bushes, producing loads of fruit. My lettuce bed kept me supplied from June to September."

Anent the character of the soil in the Yukon country, Mr. Dall ("Alaska and Its Resources," page 433) says:

"It varies from rolling and somewhat rocky hills to broad and marshy plains, extending for miles on either

side of the river. The underlying rocks in great part are azoic, being conglomerate, syenite and quartzite. The south shore of Norton Sound and portions of the Kadiac Peninsula are basalt and lava. There is on the northeast shore of Norton Sound an abundance of sandstone and clay beds containing lignite. Sandstone is also abundant on the Yukon, alternating with the azoic rocks. The superincumbent soil differs in different places. In some localities it is clayey, and in such situations is quite frequently covered with sphagnum, which always impoverishes the soil immediately beneath it. In others it is light and sandy, and over a large extent of country it is the richest alluvial, composed of very fine sand, mud and vegetable matter, brought down by the river, and forming deposits of indefinite depth. * * * The soil is usually frozen to a depth of three or four feet in ordinary situations. In colder ones it remains icy to within eighteen inches of the surface. This layer of frozen soil is six to eight feet thick. Below that depth the soil is destitute of ice, except in very unusual situations."

Lieutenant Allen, United States Army (Report on Expeditions to Alaska, 1885), says:

"I believe that lettuce, radishes, turnips, beans, peas, potatoes, carrots, and possibly buckwheat and barley, can be raised in favored localities on the middle and upper Yukon and Tanana. The climatic conditions of the coast do not prevail here; there is not as much humidity. * * * The summers, though short, are very hot. The sun is almost continually above the horizon, and the thermometer has been known to read 112 and 115 degrees Fahrenheit. Although the soil usually remains frozen the year round a depth of one or two feet

below the surface, this would not necessarily interfere with agricultural pursuits. By cultivation and proper drainage the distance of the ice-bed below the surface would be considerably increased."

With reference to cattle and other live-stock, Mr. Petroff says:

"There have been repeated attempts to raise stock cattle, sheep and hogs in large herds within the borders of Alaska; The subject is one in which the Russians first naturally took a deep interest, for they were fond of good living, and were as desirous as any people could be to have the best beef or mutton and the sweetest pork on their tables. They brought over hardy selections from the Siberian stock, placing the cattle at almost every point of importance for trial. The result, after years of patient and persistent attention, was that the herds on Kadiak Island thrived the best and became of real service in assisting to maintain the settlement. Here and there is a very fine ranging ground for pasture, and in the summer there is the greatest abundance of nutritious grasses, but when the storms of October, freighted with snow, accompanied by cold and piercing gales, arrive and hold their own until the following May, the sleek, fat herd of September becomes very much worn and emaciated. It has given its owner an undue amount of trouble to shelter and feed. Hay, however, suitable for cattle, or at least to keep cattle alive, can be cut in almost any quantities desired for that purpose, but the stress of weather alone, even with abundance of this feed, depresses, as it were, and enfeebles the vitality of the stock so that the herds on Kadiak Island have never increased to anything approximating a stock-grower's drove, rarely exceeding fifteen or twenty head

at the most. Notable examples of small flocks of sheep have been brought up since the transfer and turned out at Unalaska, Unga and elsewhere and have done well. The mutton of the Alaskan sheep, when it is rolling in its own fat, as it were, is pronounced by epicures to be very fine; but the severe winters, which are not so cold as protracted, when the weather is so violent that the animals have to huddle for weeks in some dark, low shelter, cause a sweating or heating of the wool, which is detached and falls off, greatly enfeebling and emaciating them by spring. The practice of the traders at some places now is to bring beef-cattle up in the spring from San Francisco, turn them out into the grazing grounds on the Aleutian Islands, Kadiak, and even to the north, where they speedily round out and flesh up into the very finest beeves by the middle or end of October, when they are slaughtered."

Horses are kept at Dyea, and some have found their way into the interior;* a few have also been kept for years on Wood Island, where a field of twelve acres of oats is regularly grown for their use; the grain frequently heads, but does not ripen, and the crop is harvested in the green for hay.

The vast territory of Central and Northern Alaska is unfitted for cattle-raising and agriculture, though it produces an abundance of long, fibrous white moss, the natural food of the reindeer, and Dr. Jackson (Reports on Introduction of Domestic Reindeer in Alaska, 1896), taking the statistics of the Scandinavian Peninsula as a guide, estimates that Arctic and sub-Arctic Alaska can support 9,000,000 of these animals, capable of furnishing

*A few horses have been used at Forty-Mile for several years.

a supply of food, clothing and means of transportation to a population of a quarter of a million. Every part of the reindeer has economic value; the flesh is very palatable, either fresh or cured; the untanned skin is the best material for Arctic clothing, and when tanned is much esteemed by the bookbinder, upholsterer and glove-maker; the hair, on account of its buoyancy, is extensively used in the manufacture of life-saving apparatus, and the horns and hoofs make an excellent quality of glue.

Reindeer are also useful as a means of transportation, and as such are preferable to dogs. The latter are slow and must be burdened with their own food, while a trained reindeer will travel in a day's time twice or three times the distance covered by a dog-team, and at the end of the journey can find in Alaska their natural food in abundance when turned out. It is said, however, that the moisture continually present in the soil induces a hoof disease, which operates as a drawback to their introduction. There are now over a thousand of these animals in use in the Territory, and steps have been inaugurated to increase the number.

With regard to the forests of Alaska, Mr. Petroff says:

"The timber of Alaska extends over a much larger area than a great many surmise. It clothes the steep hills and mountain sides and chokes up the valleys of the Alexander Archipelago and the contiguous mainland; it stretches, less dense, but still abundant, along that inhospitable reach of territory which extends from the head of Cross Sound to the Kenai Peninsula, where, reaching down to the westward and southwestward, as far as the eastern half of Kodiak Island, and thence

across Shelikof Strait, it is found on the mainland and on the peninsula bordering on the same latitude; but it is confined to the interior opposite Kadiak, not coming down to the coast as far eastward as Cape Douglas. Here, however, it impinges on the coast, or Cook Inlet, reaching down to the shores and extending around to the Kenai Peninsula. From the interior of the peninsula above referred to the timber line over the whole of the interior of the great area of Alaska will be found to follow the coast line at varying distances of from 100 to 150 miles from the seaboard, until that section of Alaska north of the Yukon mouth is reached, where a portion of the coast of Norton Sound is directly bordered by timber as far north as Cape Denbigh. From this point to the eastward and northeastward, a line may be drawn above the Yukon and its immediate tributaries as the northern limit of timber of any considerable extent."

Of these trees, the greater portion are of the ever-green species, the spruce family largely predominating. The spruce lumber, however, is not adapted to fine finishing on account of the exudation when slightly heated of a sticky, resinous gum, which is difficult to remove. Throughout the region where the spruce flourishes are to be found, especially along the water courses, small bunches of white birch, and on the lowlands, far beyond the limits of the spruce, the alder and willow thrive. In nearly all the timber sections of the Territory is found a species of cottonwood, which often grows to large size, but west of the 141st meridian no timber grows at an altitude greater than 1,000 feet above the sea level.

Concerning the varieties and value of the timber of Alaska, Mr. Petroff says:

"1. Yellow Cedar (*Cupressus Nutkanensis*).—This is

one of the most valuable woods on the Pacific coast, combining a fine, close texture with great hardness, durability and a peculiar, but pleasant odor. The Russians named it 'dushnik' (scented wood) on account of the last-named qualities. In the immediate vicinity of Sitka, on Baranof and adjoining islands, this tree was nearly exterminated by the Russians, but on the Kehk Archipelago (Koo Island), and on Prince of Wales Island and a few others of the Alexander Archipelago, near the British Columbian frontier, considerable bodies of it can still be found, and beyond the line, in the Nasse and Skeena River valleys, it is also abundant.

" 2. Sitka Spruce (*Abies Sitkensis*).—This is the universal forest tree of Alaska and is found of gigantic size on the islands of the Alexander Archipelago and on the shores of Prince William Sound. Its medium growth it appears to attain in the valleys of the Yukon and the Kuskokwim, while on the east side of Cook Inlet and on the more northern uplands it is quite stunted and dwarfed. The Sitka spruce is most closely connected with the various requirements of all Alaskan natives in their domestic economy, as its timber is used in the construction of nearly every dwelling throughout the country, and even those tribes which inhabit barren coasts, far removed from the limits of coniferous trees, are supplied with it through means of freshets and ocean currents. The sappy outer portion of the wood furnishes splinters and torches that light up during the long months of winter the dark dwellings of interior tribes of Tinneh stock, who know not the oil lamp of their Innuït neighbors. The same material is also used for sledge runners on loose but crisp-frozen snow, over which iron or steel would drag with difficulty, as over deep, coarse

sand. The Thlinket and the Hyda fashion their buoyant and graceful canoes, both large and small, from spruce logs, and split from them also the huge planks used in the construction of their houses. The lumber manufactured from the Sitka spruce is much less durable than the yellow cedar, very knotty, and consequently not adapted for ship-building.

"3. Hemlock (*Abies Martensiana*).—Though this tree generally exceeds the spruce in size, it is of rare occurrence, much less valuable as timber, but well adapted for fuel

"4. Balsam Fir (*Abies Canadensis*).—This tree is found only in small, scattered bodies, and is of little value as timber, but the natives use its bark for tanning and for other purposes.

"5. Scrub Pine (*Pinus Contorta*).—The scrub pine is found throughout the interior of Alaska in small, scattered bodies up to the highest altitude, but it is of no value as timber.

"Thus, it will be seen that the forests of Alaska are altogether coniferous, as the small bodies of birch and the alder and willow thickets on the lower Yukon and Kuskokwim rivers can scarcely be considered to come under this head. Aside from the yellow cedar, which is rare, the timber-wealth of Alaska consists of the Sitka spruce, which is not only abundant and large (trees of from three to four feet in diameter being quite common in Southeastern Alaska and Prince William Sound), but also generally accessible.

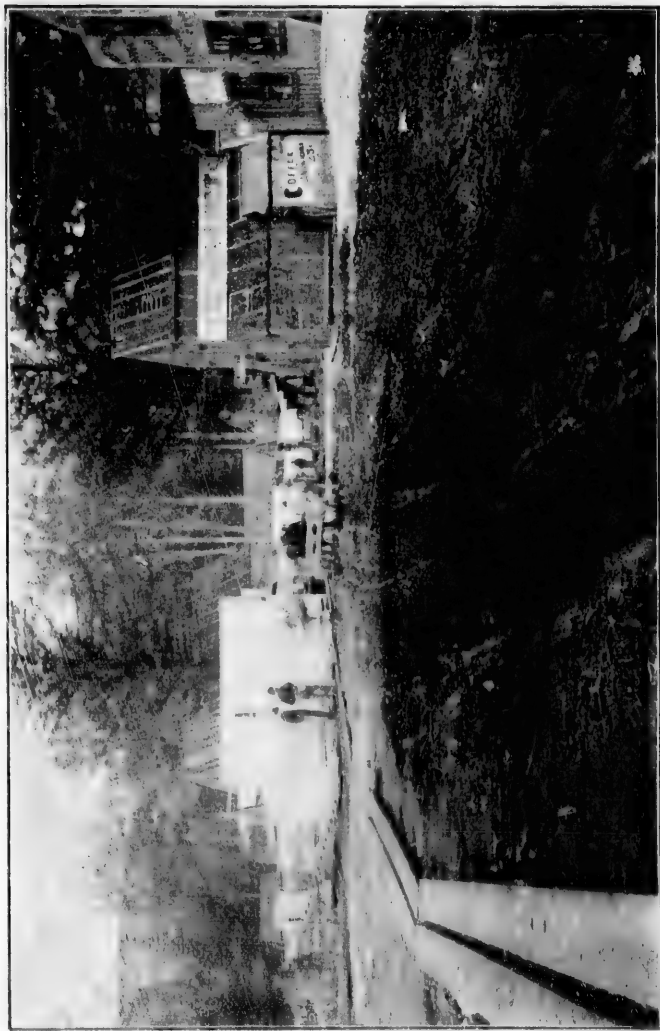
"To give even an approximate estimate of the area of timbered lands in Alaska is at present impossible, in view of our incomplete knowledge of the extent of mountain ranges, which, though falling within the tim-



Tide Flats.

LANDING AT SKAGWAY.

Indian Village.



STREET IN SKAGWAY (September, 1897).

ber limits, must be deducted from the superficial area of forest covering.

"A few small saw-mills of exceedingly limited capacity have been erected at various points in Southeastern Alaska to supply the local demand of trading-posts and mining-camps; but finished building lumber is still largely imported, even into this heavily timbered region. In all Western Alaska but one small saw-mill is known to exist, which is on Wood Island, St. Paul Harbor, Kodiak. The mill was first set up to supply sawdust for packing ice, but since the collapse of that industry, its operations have been spasmodic and not worth mentioning. Lumber from Puget Sound and British Columbia mills is shipped to nearly all ports in Western Alaska for the use of whites and half-breeds, while the natives in their more remote settlements obtain planks and boards by the very laborious process of splitting logs with iron or ivory wedges. On the treeless isles of the Shumagin and Aleutian groups, as well as in the southern settlements of the Alaskan Peninsula, even fire-wood is imported from more favored sections of the Territory, and commands high prices.

"The drift-wood washed upon the shores of Behring Sea and the Arctic is of very little value as building material, and cannot be worked into lumber."

In his report for the fiscal year 1891, Governor Knapp, of Alaska, speaking of the fish industry of the Territory, says:

"Among the resources of Alaska are the products of the sea. The native population have always obtained much of their food supply from the waters, and, in a less degree, their clothing and many of the conveniences of life. Their winter supply of food is still largely made

up of dried fish, sea-weed and fish-eggs, while fresh fish are eaten at all seasons of the year, not only by the natives, but by all classes of people, and the abundance of this product insures the most thriftless with a ready means of subsistence.

"Salmon fishing is by far the largest and most important industry. Thirty-seven canneries and seven or more salting establishments are reported as in operation in 1890. The aggregate pack of the canneries was 688,332 cases of four dozen one-pound cans, falling a little short of the pack of 1889. The amount of salted salmon was about 7,300 barrels, a little more than the year previous. These salmon-fisheries represent a capital of about \$4,250,000, and they give employment to about 2,000 white laborers, 2,500 Chinamen and 1,000 natives, and require in their business, for transportation and their work, about 100 steam vessels and 500 fishing boats. The white and Chinese laborers do not usually remain in the Territory after the season is over. Below is given a comparative statement of the canned product since 1883:

YEAR.	TOTAL PACK, CASES.	YEAR.	TOTAL PACK, CASES.
1883.....	36,000	1888.....	439,293
1884.....	45,000	1889.....	702,993
1885.....	74,800	1890.....	688,332
1886.....	120,700		
1887.....	190,000	Total.....	2,297,118

In 1896 the product of the different canneries was valued at \$2,383,757, and the salmon pack for the year amounted to 949,645 cases of four dozen one-pound cans to the case, and 10,000 barrels,* requiring the employ-

*Report of Governor Brady for 1897.

ment of over 5,000 people, who earned wages amounting to \$130,000.

Of the salmon in Alaskan waters, in sufficient quantities to constitute a commercial and economic resource, there are several species, including the red, the king, the silver, the hump-back, the dog, the steel-head and the "Dolly Varden" varieties. The salmon live in salt water, but ascend the streams in the spring of the year to spawn in fresh water. Under an Act of Congress approved June 9, 1896, the erection of any dam, barricade, or other obstruction in the streams to impede their progress is prohibited under penalty of a fine of \$250 for every day such obstructions are maintained. Government officers, under the control of the Treasury Department, are present to enforce the provisions of the law.

There are two fish-hatcheries, one at Karluk, where 5,500,000 eggs were secured, and the other on Etholin Island, which produced over 2,000,000 eggs.

Next in importance to the salmon-fishing industry is the codfish business, which has been carried on about the Aleutian Islands and in Behring Sea since 1865. The catch in 1890 amounted to a total of 1,138,000 fish, valued at \$569,000. Since the beginning of the business in 1865, there have been taken 25,723,000 fish, valued at \$12,861,650. The cod banks in Alaskan waters, though known to be of wide extent, have not been sufficiently surveyed to exactly define their limits. Shumagin Bank, just south of the island of the same name, covers about 4,400 square miles; Slime Bank, north of Unimak Island, has an area of 1,445 square miles; Albattross Bank, southeast of Kadiak, extends over 2,900 square miles; Baird Bank, north of the Alaskan Penin-

sula, covers an area of 9,200 square miles, while the great Portland Bank, northeast of Kadiak, though not surveyed, is of great area. Over all the cod banks there are from fifteen to fifty fathoms of water, with fine, gray sand bottom.

At Kilisnoo there is "The Alaska Oil and Guano Company," giving employment to about 100 men, half of whom are white, the remainder Indians and Chinamen. They have vessels and appliances for taking fish. In 1891 the product of this factory was 300,000 barrels of oil, 800 tons of guano, and 700 barrels of salt salmon. The oil is worth about 30 cents per gallon and the guano \$30 per ton. In 1896 the product of this factory was 25,750 barrels, 90,650 gallons of oil, 550 tons of guano, 700 half-barrels of salt herring; total value, \$38,000. The chief source of the product is the herring, which is rich in oil, and very abundant in the still waters at different places from August to February. Its flesh is highly esteemed as food, and is also used as bait for taking halibut and other large fish.

Halibut are plentiful throughout the entire year in Southern, Central and Western Alaskan waters. They range in weight from 15 to 250 pounds, those weighing 50 to 75 pounds being preferred.

In the Yukon are found the grayling, white fish and burbot (known in Alaska as the "losh") in great numbers. In Southeastern Alaska black bass are abundant, and pike and trout are found in nearly all the streams. In 1893 the investment in the Alaskan fishing industry, including cash capital, vessels, buildings, etc., amounted to \$2,609,650.

The whaling business has been carried on in the

waters adjacent to Alaska for many years. Governor Knapp, in his report for 1892, says:

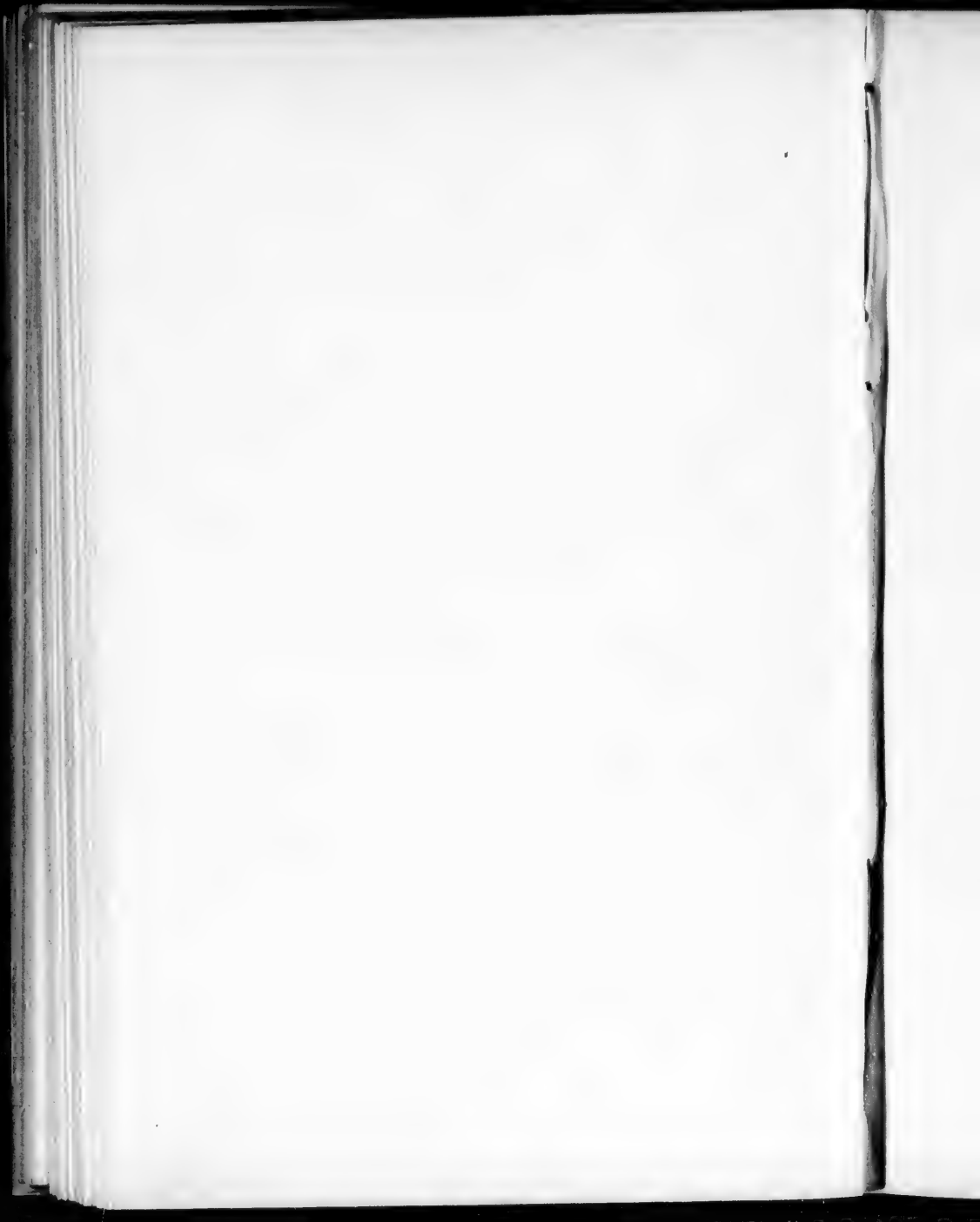
"The whaling business, in which 48 vessels are engaged, resulted in a catch for 1891 of 12,228 barrels of oil, 186,250 pounds of bone, and 1,000 pounds of ivory. The total value was \$1,218,293."

In the eighteen years from 1874 to 1891, inclusive, the whale catch was 318,917 barrels of oil, 4,931,950 pounds of bone, and 272,410 pounds of ivory.

With regard to the mineral resources of Alaska, we have but little information, and, owing to the difficulties attending the careful survey of the country, much time must elapse before accurate knowledge can be obtained, or any great development expected.

Gold, silver, copper, lead and iron have been found; extensive coal and iron fields are known to exist, and oil is reported. In the Copper River country the Indians display articles of pure copper, and the metal is said to be very abundant.

According to Professor J. Edward Spurr, of the United States Geological Survey, pure native silver is frequently found, and the metal is widely diffused in combination with gold. In 1896 the silver yield of the Territory was valued at \$45,798. The Yukon country also produced considerable platinum. The gold production will be referred to in a separate chapter.



CHAPTER VII.

GOLD—DISCOVERY, DISSEMINATION AND
PRODUCT.

"Heaven's pavement here is stored—unsunned heaps of hidden treasure."

Gold* has been found in greater or less quantities over a wide expanse of country in Alaska and adjacent territory. The exact date of its discovery is uncertain. A Russian engineer named Doroshin discovered the metal in small quantities on the Kenai Peninsula in 1848 and continued his explorations in 1850-1, without, however, finding anything of sufficient importance to attract attention.

In 1860, it is said, an employee of the Hudson Bay Company stumbled on to some gold, but the facts were not made public; possibly the fur company feared an immigration which would develop the country and destroy their monopoly. Certain it is that no knowledge of rich deposits existed at the time the United States acquired the Territory, and Mr. William C. Greenfield, in United States Census Reports for 1890, referring to the Yukon River district, says :

*Gold is valued as follows :

1 ounce troy, pure gold, is worth.....\$	20.67
1 dwt. troy, pure gold, is worth.....	1.03
1 grain troy, pure gold, is worth.....	.041
1 ounce avoirdupois, pure gold, is worth.....	18.84
1 pound avoirdupois, pure gold, is worth.....	301.37
1 ton, 2,000 pounds, pure gold, is worth.....	602,737.20

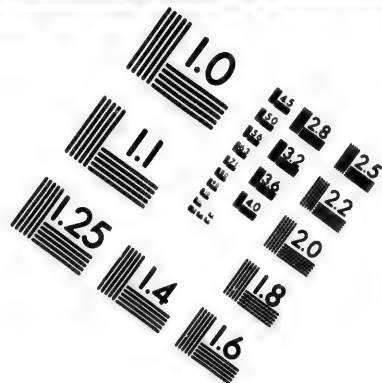
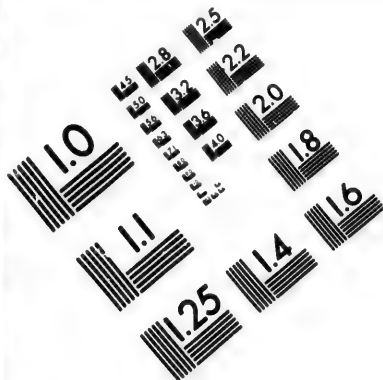
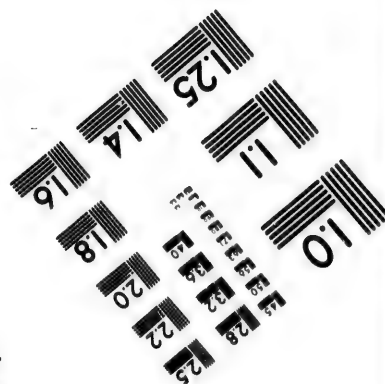
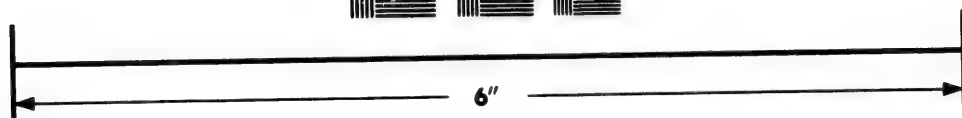
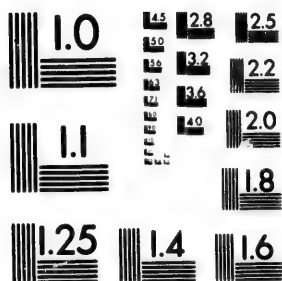


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"Mining cannot be called a success in the Yukon up to the present time. Since the first excitement in 1886, there have been but few instances of individuals taking more than \$2,000 for two or three seasons' work."

Perhaps the first white prospector to penetrate the interior was George Holt, who crossed the mountains for the express purpose of gold-hunting in 1878; but little is known of the route he traveled, except that he descended the chain of lakes back of Dyea and entered the Hootalinqua River country by way of the Indian trails. He found gold, but not in sufficient quantity to encourage him in further effort.

Lieutenant Allen, United States Army, in 1885 found "color" at the mouth of Copper River, and for many years Indians have brought out of the Copper River district furs, copper and gold, but the region has not been explored by white men.

Gold was discovered near Sitka in 1879, and in 1880 Joseph Juneau discovered gold near the town which now bears his name. The same year Edward Bean organized an expedition, which set out from Sitka, crossed over the Chilkoot Pass to Lake Lindeman, where boats were constructed in which the party descended the Lewis River as far as the Hootalinqua. They discovered gold, but only in such small quantities that men could not make, on an average, more than \$2.15 per day. About this time numerous small parties began to make their way over the somewhat familiar Chilkoot trail and to push further and further into the interior, down the large rivers and up their tributaries. All of them found gold, but a party of miners in 1881 were the first to find it in really paying quantities in the Yukon Valley. They went to the mouth of the Salmon River and ascended

that stream for 200 miles and found gold on every bar. The Lewis River, Stewart River and Cassiar Bar, until recently the richest deposits in the Yukon country, were located in 1885. Miller Creek was located in 1892. All these Yukon Valley points are in British territory, but in 1886 the prospectors carried their operations across the boundary line and found gold in Alaska on Forty-Mile Creek and its tributaries, Glacier Creek, Poker Creek, Davis Creek, etc., in such quantities as to cause the desertion of the Canadian fields further up the valleys; Birch Creek was prospected with good results in 1893, and about 100 claims were staked out along its course; in 1895 Eagle Creek, its tributary, was discovered. A prolonged drouth in the summer of 1896 caused a suspension of work in the Forty-Mile district for want of water. All these American diggings continued to be worked with profit until the sensational discoveries by George W. Carmach in August, 1896, on the Klondike* River and its tributaries, made that hitherto unheard-of region the center of the world's mining interest and attracted the attention of all civilized countries. Forty-mile Creek takes its name from the fact that it enters the Yukon about that distance below Fort Reliance, an abandoned trading-post. It will always be interesting as the point where the first genuine placer gold-mining excitement in Alaska started. The stream, almost if not wholly in Alaska, is about 250 miles long, with many tributaries, all bearing gold, it is said, in paying quantities. Sixty-Mile Creek, which is nearly all in British territory, enters the Yukon about 50 miles above the mouth of the Klondike, and has given good yields.

*Klondike is a corruption of the Indian word "Troan-dik," or "Thronduik," meaning plenty of fish.

At nearly every point in the Territory where search has been made gold, in greater or less quantities, has been found. From all of the streams so far prospected come reports of gold deposits; fine dust far down the streams, growing coarser as the head-waters are approached, leading to the belief that rich placer deposits, if not the "mother lode," are to be found somewhere up the gulches, which the empiricism and endurance of the American miner will combine to locate.* The data at hand seems to show a placer gold-belt covering an area of over 700 square miles, extending in Alaska for 300 miles westward from the border across the Yukon Valley and including all the tributaries of that stream. Most of this area remains to be prospected; for its development and extension, if any, we must look to the explorations sure to follow the present interest and excitement. Gold-bearing quartz in ledges has also been found in different places, and there have been extensive stamp-mills profitably operated on Douglass Island for many years, where the ore, though of low grade, appears inexhaustible. The Cook's Inlet district produced \$120,000 in 1896. Mining districts are organized on Kadiak Island and Portage Bay.

The estimated product of the Yukon placers in 1890 was \$50,000, and the amount was doubled the following year. The product of Alaskan creeks in 1893 was \$198,000; in 1894 it had increased to \$409,000; in 1895 the amount was given as \$778,609, of which \$709,000 was from the Yukon district. The production of the Yukon district for 1896, including United States and British territory, is estimated at \$1,400,000. In 1897 civilization received news of the great wealth in the Klondike region, and estimates of the gold brought out

*Since the above writing comes an unverified report of the discovery of the "mother lode."

varied from \$6,000,000, by Mr. R. E. Preston, Director of the Mint at Washington, to \$10,000,000, by H. C. McIntosh, Governor of the Northwest Territory (British). Dr. Sheldon Jackson, long a resident of Alaska, and an authority upon matters concerning it, says the newspaper reports of its vast wealth have not been overestimated, but warns people against rushing into the country without thorough preparation to withstand the hardships and privations.

Of the Yukon district, Professor J. Edward Spurr, of the United States Geological Survey, says :

"The Yukon districts lie in a broad belt of gold-producing rocks, having a considerable width, and extending in a general east-and-west direction for several hundred miles. Throughout this belt occur quartz veins which carry gold, but, so far as yet found out, the ore is of low grade, and a large proportion of the veins have been so broken by movements in the rocks that they cannot be followed. For this reason the mines in the bed-rock cannot be worked, except on a large scale with improved machinery, and even such operations are impossible until the general conditions of the country in reference to transportation and supplies are improved.

"Through the gold-bearing rocks the streams have cut deep gullies and canyons, and in their beds the gold which was contained in the rocks which have been worn away is concentrated, so that from a large amount of very low-grade rock there may be formed in places a gravel sufficiently rich in gold to repay washing. All the mining which is done in this country therefore consists in the washing-out of these gravels.

"In each gulch prospectors are at liberty to stake out claims not already taken, the size of the claim being determined by vote of all the miners in each gulch, accord-

ing to the richness of the gravel. The usual length of a claim is about 500 feet along the stream, and the total width of the gulch bed, which is ordinarily narrow. When a prospector has thus staked out his claim, it is recorded by one of the miners, who is elected by his fellows in each gulch for that purpose, and this secures him sufficient title. The miners' laws are practically the entire government in these districts, for the remoteness prevents any systematic communication being carried on with the United States. All questions and disputes are settled by miners' meetings, and the question in dispute is put to popular vote.

"In prospecting the elementary method of panning is used to discover the presence of gold in gravel, but after a claim is staked and systematic work begun, long sluice-boxes are built of boards, the miners being obliged to fell the trees themselves and saw out the lumber with whip-saws, a very laborious kind of work. The depth of gravel in the bottom of the gulches varies from 1 foot up to 20 or 30 feet, and when it is deeper than the latter figure it can not be worked.

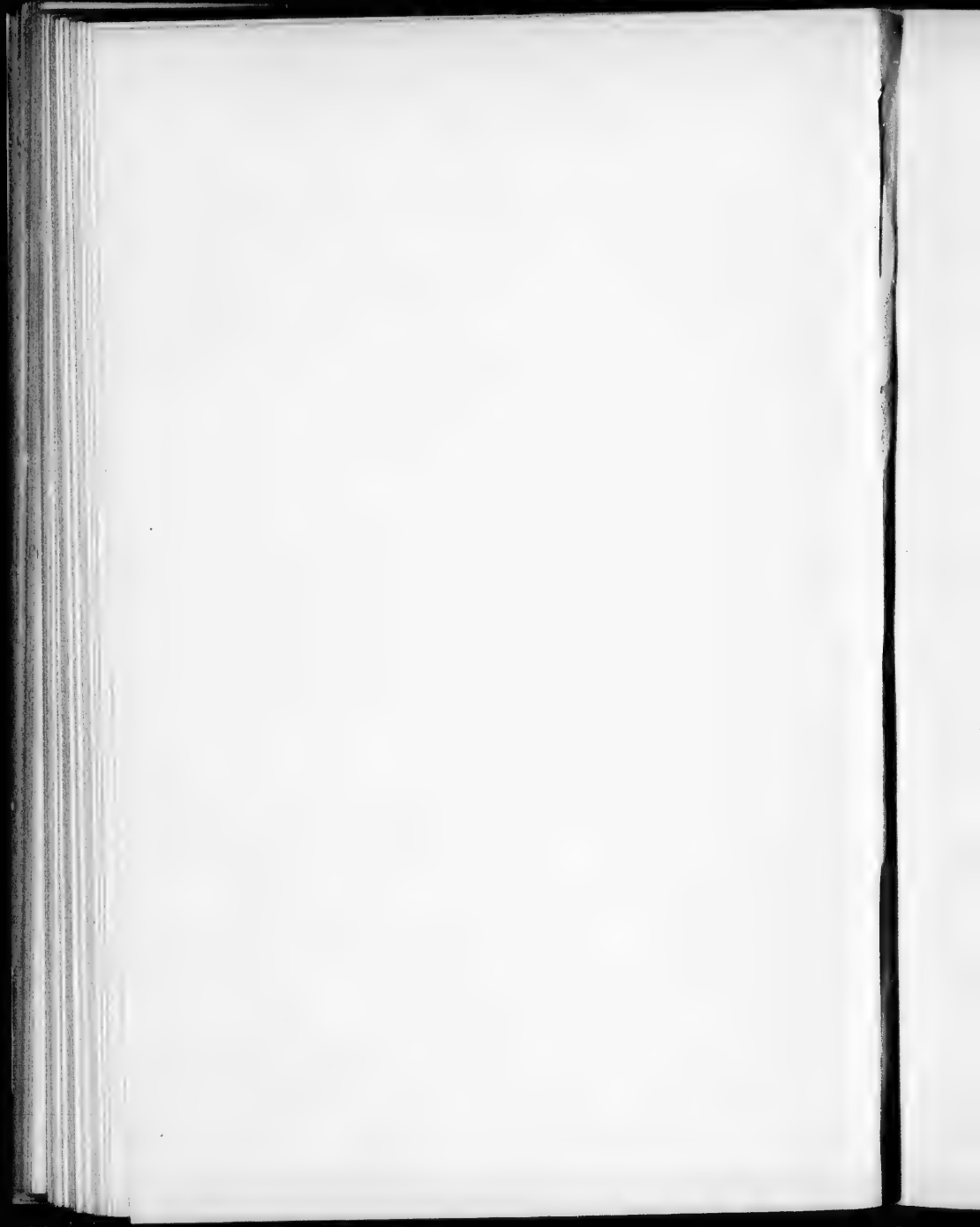
"The upper part of the gravel is barren, and the pay-dirt lies directly upon the rock beneath, and is generally very thin. To get at this pay-dirt all the upper gravel must be shoveled off, and this preliminary work often requires an entire season, even in a very small claim. When the gravel is deeper than a certain amount, say 10 feet, the task of removing it becomes formidable. In this case, the pay-dirt can sometimes be got at in the winter season, when the gravel is frozen hard, by sinking shafts through the gravel and drifting along the pay-dirt."

"Prospecting in this country," says Mr. Wilson (Guide to Yukon Gold-Fields), "is very difficult, owing to

the character of the surface, the general formation being soft, the hills having been worn smooth by glacial action, which left a layer of dirt over the whole country to a depth of from 5 to 15 feet. This is frozen the whole year, with the exception of a few inches on the surface. The method of prospecting is usually carried on by sinking a number of holes to bed-rock across the bed of the creek, or cross-cutting it by a tunnel and testing the dirt every few feet by panning, thus locating the pay-streak. After a creek has been prospected, the glacial drift must be removed. The trees and roots are taken away and a stream of water turned on, which, with the help of the sun, in time bares the pay-streak. The course of the water is then turned along the hillside, a dam built and sluice-boxes erected. These are made with corrugated bottoms, which catch and retain the gold. They are given a grade regulated by the coarseness of the gold; if the gold is fine, the grade is slight; if coarse, a greater pitch can be given, which is preferable, as more dirt can be handled. The lack of water in these gulches proves a great hindrance in many cases. The seasons are dry, and only the glacial drip of the hills can be depended upon.

"A method lately adopted, by which mining can be done in winter, has proved profitable, besides doing away with the long period of idleness. This is called burning, and is done by drifting, melting away the frost by fire and taking out only the pay-dirt, leaving the glacial drift and surface intact. The pay-dirt thus removed is easily washed in the spring, when water is plenty."

When the thawing process reaches the pay-streak, a noxious gas similar to fire-damp is generated, which must be removed or greatly diluted with fresh air before entering the shaft.



CHAPTER VIII.

ROUTES TO THE GOLD-FIELDS.

"No dawn, no dusk, no proper time of day,
No road, no street, no t'other side the way."

—Hood.

Alaksa is a difficult country to traverse, even in the short summer season, there being no roads; and even Indian trails, owing to the small population of natives, are very rare. The surface is rough and mountainous in many places, and on the more even portions travel is impeded by the growth of thorny cactus and knee-deep wet moss almost everywhere encountered.

Men who contemplate entering the gold fields should be sober, strong and healthy; they should be practical men, able to adapt themselves quickly to their surroundings. Special care should be taken to know that they have sound lungs, that they are free from rheumatism and rheumatic tendency, and that their joints, especially the knee joints, are strong and have never been weakened by injury, synovitis or other disease. In temperament they should be of a cheerful, hopeful disposition, willing to work. Men of sullen, morose natures, although they may be industrious, are very apt, as soon as the novelty of the country wears off, to become dissatisfied, when small reverses induce pessimism and melancholy.

It will be wise for travelers to form parties of about four people, as such an arrangement will be found less

expensive and offers other advantages. The best time to start is about the middle of April, and navigation on the river closes about the middle of October.

There are at least four routes to the gold-fields wholly or in part across United States territory. Besides, several trails used by the Indians are available.

The first by ocean steamer from Seattle or San Francisco to St. Michael Island, thence by river steamer up the Yukon. The Yukon is navigable from its mouth to White Horse Rapids, a distance of over 1,600 miles.

The second is by ocean steamer to Juneau, and farther on by smaller boat to Dyea; thence by land over the divide, then following the chain of lakes and rivers from the head of the Yukon basin to Dawson City.

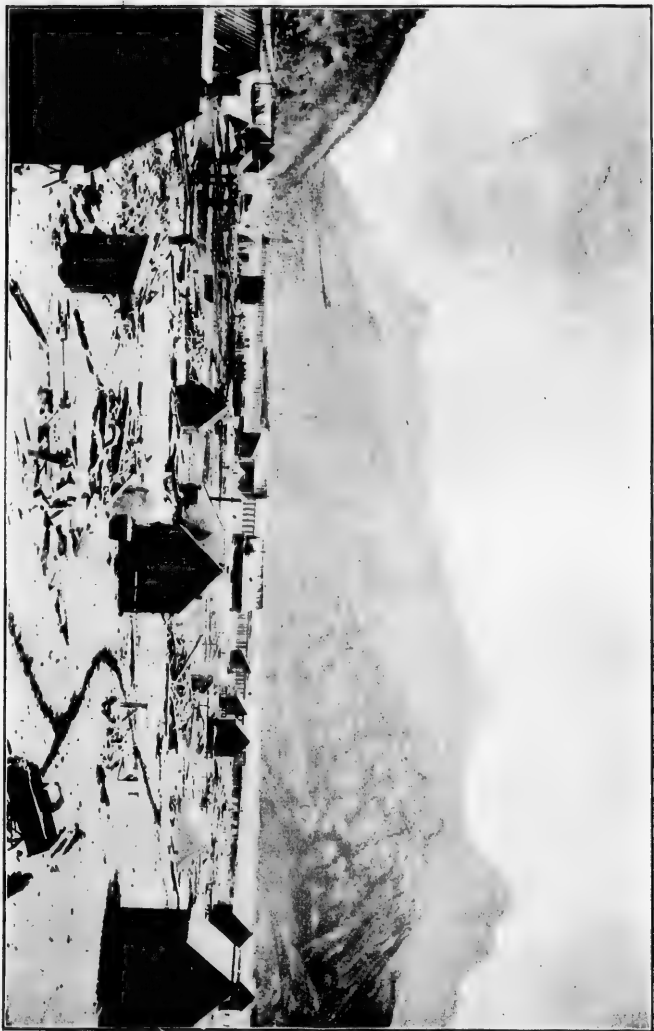
The third is by the Taku Inlet.

The fourth is by the Stikine River.

Ocean steamers of different lines land passengers and freight at Fort Wrangell, Juneau, near the mouth of the Copper River, St. Michael and other points. The safe passages for vessels between the islands of the Aleutian chain are the Amukta (longitude 172°) and the Unimak (longitude 165°).

The first of these routes is the least difficult, but is much the longest and more expensive than the others.

Leaving Seattle or San Francisco on a well appointed ocean steamer, the run is made to St. Michael Island, the end of the ocean voyage, in about fifteen days. Vessels can not go to St. Michael much before the end of June, on account of large bodies of drifting ice that beset the waters of the approach. After a delay of from one to fifteen days, a transfer is made to a flat-bottomed river boat, capable of carrying about 150



SKAGWAY WATER FRONT (October, 1897).



CAMP BRUMBACK—COPPER RIVER.

passengers and 150 pounds of baggage each (no more baggage is permitted), and another voyage of from two to three weeks up the river is begun. The distances between principal points on this route, as given by transportation companies and travelers, are as follows :

San Francisco to Seattle.....	697 miles
Seattle to St. Michael.....	2,174 miles
St. Michael to mouth of Yukon	80 miles
Mouth of Yukon to Andreafski.....	70 miles
Andreafski to Anvik.....	150 miles
Anvik to Nulato.....	300 miles
Nulato to Novikakat.....	145 miles
Novikakat to Tanana.....	80 miles
Tanana to Fort Yukon.....	450 miles
Fort Yukon to Circle City.....	80 miles
Circle City to Forty-Mile.....	240 miles
Forty-Mile to Dawson City.....	52 miles

Total..... 4,518 miles

The first boat of the season leaves San Francisco about May 1st and the last about August 30th, but, owing to low water in the Yukon early in the season, late boats are not likely to get beyond Fort Yukon. The trip requires from thirty-five to forty days and costs about \$200 00. In 1897 only three vessels plied on the Yukon River, but it is understood that twenty suitable boats are now being constructed to meet the increased trade.

The second, usually referred to as the Juneau Route, is more direct, though much broken by the different methods of transportation. Its possible cheapness recommends it to those of small means. From Seattle by steamer, which makes five or six trips a month, a four-days journey brings the passenger to Juneau; this, the principal port in Alaska, is a town of about 5,000 inhabitants, with two hotels, good shops, a theatre and

electric lights. It is said to be a good outfitting-point. From Juneau there is still about 100 miles of salt water journey to Dyea, at the head of Lynn Canal, one of the long, narrow inlets so common on the Alaska coast. This part of the trip takes twelve hours. There is at Dyea, besides a trading-post, which offers the last chance short of Fort Selkirk to supply forgotten articles, a village of from 200 to 300 Chilkoot Indians, who make a business of packing miners' outfits over the mountains, a distance of from twenty-seven to thirty-two miles, according to choice of routes. Some white contractors are there also, who maintain a pack-train of horses over the first twelve miles of the distance. Sleds and dogs to pull them can also be purchased; single dogs are valued at from \$25 to \$125; from six to twelve dogs are hitched to a sled and can travel about fifteen miles per day with a load of 100 pounds for each animal. The only dogs suitable for this work are those found in the Territory. Animals imported from milder climates soon succumb to the rigors of the Alaska winter. Some men draw their own loaded sleds and are able to transport in this manner by doubling up, it is said, from 500 to 1,000 pounds at a trip. Upon leaving Juneau the traveler has the choice of three routes, viz.: Chilkoot Pass, which has been quite generally used. It is 3,500 feet high, with a sharp pitch of about 600 feet near the crest, in which, at times, every step must be cut in the ice, though sheep, cattle and horses have occasionally been taken over the summit.* Wood has to be carried for any fire required for the one night almost certain to be spent on the trail. The crest of this pass is about

*Since this writing the War Department has been informed that by February 1, 1898, a man named Hugh Wallace would have a trolley line in operation over the Chilkoot Pass.

fifteen miles from Dyea, and a portion of the road has been corduroyed. In summer it is best to leave Dyea about 6 o'clock in the evening, as that will bring the traveler to the snow near the crest at a time in the morning when there will probably be a crust thick enough to bear a man's weight. The descent toward the interior is much easier than the ascent, as the grade is not so steep. White Pass, or Moore's Pass, as it is sometimes called, is 1,000 feet lower than Chilkoot Pass, is passable at all seasons of the year, and wood is everywhere plentiful. From Skagua, the starting-point, there is a toll-road over White Pass which has been very recently constructed at a cost of \$100,000; the road is said to be practicable for wagons, but the rates of toll have not yet been established. Chilkat Pass, 3,000 feet above the sea and about 45 miles from the coast, sometimes referred to as the Dalton trail, is also available, but there is little information concerning it beyond the fact that it is a land route to Fort Selkirk and is supposed to be about 150 miles shorter than the distance by the lakes and rivers.

The cost of freighting across the mountains has been from five to fifty cents per pound, but if the rush continues, as is quite likely, and with reason to expect an increase, the prices will undoubtedly rise to such a figure that more men than heretofore will be compelled, owing to lack of funds, to do their own packing. One hundred pounds is about the most that the average man can pack, though it is said that some Indians make good time with twice that weight. Two hundred pounds is the usual load for the ordinary pack animal. As nothing less than 1,000 pounds will include an outfit for one man, it will require from three weeks to one month for him to pack it across the mountain himself.

Once over either the Chilkoot or White Pass, the de-

scent of the lakes and rivers to the gold-fields begins. For this part of the trip a boat is necessary and must be either purchased or constructed. But few, so far, have been for sale, though it is said parties are at work preparing a supply; single boats cost from \$275.00 to \$300.00. However, the tools requisite for boat-building are so much a necessity in a new country that no one should think of starting in without them. Four men can, with proper tools, if handy in their use, take the standing spruce, whip-saw out the lumber and make a boat large enough to carry themselves and their 4,000 pounds of baggage, in a couple of weeks. There are at time of writing* two pits for whip-sawing at Lake Lindeman, but suitable timber is scarce, and can not be secured much under three or four miles. At Lake Bennett there is a saw-mill, operated by Americans, and lumber is plentiful. The boat usually constructed is about twenty-two feet long and four and a half to five feet wide. It must be strong and stiff to endure the storms on the lakes and the tossing about it will receive in the rapids. A sail should be provided to steady the boat and take advantage of any wind, and the same canvass will be found in many ways useful in camp. There will be times when, owing to shallow water, ice or rapids, the boat will have to be lightened, or hauled out of the water entirely, and carried along with the baggage to the next navigable water. This is called portage and is a slow and laborious process, well calculated to test the patience and endurance of the travelers. After passing through Lake Lindeman there is a portage of about a mile, around a short, rapid and dangerous bit of water, to Lake Bennett; then, following Lake Bennett to Lake Tagish, at the foot of which is a small permanent Indian village, and Marsh

*November, 1897.

Lake or Mud Lake, the voyager finds himself at the head of Miles Cañon, where begins three miles of indescribably rough water, terminating in White Horse Rapids, where the waters rush through the narrow gorge at a terrific rate, variously estimated at from fifteen to thirty miles an hour. To pass these rapids it is customary to unload and carry most of the freight to some point below and then let down the boats by ropes, keeping close to shore. No novice in water craft should attempt to pilot his boat through these waters, though for experienced boatmen they are said not to be especially dangerous.* It is to be expected that the demand for their services will bring to this point men who will make a business of taking boats through, and the travelers will have to decide for themselves whether they will portage around the rapids, pay the pilot charges, or take the chances of losing their outfits and perhaps their lives. Further down the river will be encountered Five Finger Rapids, and three miles further Rink Rapids, neither of which are considered very dangerous. Just below White Horse Rapids opens to view Lake Le Barge, 35 miles long. About the foot of this lake, on the left-hand side, and for 200 miles down the Lewis River, is one of the best game regions known in the Northwest, where moose and mountain sheep a year ago, and in all previous years, abounded. In the river's course will be found many timbered islands, and if the time can be spared, a week or two might be well spent in hunting, to supply meat and cutting building logs for rafting down the river, when, if not wanted for the owner's use, they will readily sell at a good price at Dawson City or other points.

*Alfred J. Daly, Assistant United States Attorney for the District of Alaska.

The distances from Seattle, by way of Chilkoot Pass (and very little difference for either of the other passes back of Dyea) are, according to figures considered reliable, about as follows:

Seattle to Juneau.....	899	miles
Juneau to Haines.....	80	miles
Haines to Dyea.....	26	miles
Dyea to Sheep Camp.....	11 ½	miles
Sheep Camp to crest Chilkoot		miles
Pass.....	3 ½	miles
Crest to Codler Lake.....	4	miles
Portage to Long Lake.....	3 ½	miles
Long Lake.....	2 ½	miles
Portage to Deep Lake.....	¼	miles
Deep Lake.....	1 ½	miles
Portage to Lake Lindeman.....	2 ½	miles

Total, Dyea to Lake Linde-		
man.....	31 ¼	miles
Portage to Lake Bennett.....	1	mile
Through Lake Bennett.....	30	miles
Lake Bennett to mouth of McClin-		
tock River.....	45	miles
Mouth of McClintock River to White		
Horse Rapids.....	28	miles
White Horse Rapids to Lake Le		
Barge.....	28	miles
Through Lake Le Barge.....	31	miles
Lake Le Barge to mouth of Hootalin-		
qua River.....	33	miles
Hootalinqua River to Little Salmon		
River.....	70	miles
Little Salmon River to Five-Finger		
Rapids.....	61	miles
Five-Finger Rapids to Rink Rapids	3	miles
Rink Rapids to mouth of Pelly		
River.....	56	miles
Pelly River to Upper Ramparts....	120	miles
Upper Ramparts to Ogilvie.....	20	miles
Ogilvie to Dawson City, about.....	100	miles
Total.....	1,662 ¼	miles

Mr. William Ogilvie, Land Surveyor for the Canadian Government, makes the distance from the head of canoe navigation to Dawson City 575.70 miles. From San Francisco to Juneau is about 1,596 miles by water. The trip from Juneau to Dawson City requires from 23 to 28 days if no serious delays are experienced.

The great rush through Chilkoot Pass and consequent blockading of the way has led to the investigation of other possible routes from Juneau to the head-waters of the Yukon. One of the ways recommended is known as the Taku Route. The entrance to Taku Inlet, from which the route takes its name, is about twelve miles south of Juneau and is navigable to ocean vessels for eighteen miles, to the mouth of the Taku River. This river is navigable for canoes at all stages of water for 58 miles, to the mouth of Nakinah River, where there is a portage of 70 miles in a northeasterly direction to Lake Teslin. From here, Dawson City, 598 miles distant, can be reached by boat with comparative ease and the dangerous Miles Cañon and White Horse Rapids are avoided. The total distance from Juneau to Dawson by the Taku route is about the same as that over the passes back of Dyea.

The fourth route is the Stikine River Route, by way of that river to Telegraph Creek; thence to Lake Teslin, where it joins the Taku Route. The trail has already been cut through from Telegraph Creek to Lake Teslin, a distance of 150 miles, and is said to be practicable for pack-trains, and with some work done on it, even for wagons. The Stikine River is navigable for the entire 140 miles, to the mouth of Telegraph Creek. The approximate distances from Seattle to Dawson City over the Stikine Route are reported to be as follows.

Seattle to Fort Wrangell.....	750 miles
Fort Wrangell up Stikine River to Telegraph Creek.....	150 miles
Telegraph Creek to Lake Teslin (overland) ..	150 miles
Lake Teslin to Dawson City, through that lake to Hootalinqua, Lewis and Yukon rivers.....	598 miles
Total.....	1,648 miles

A route by the way of the Copper River Valley and the White River Valley is also suggested. Lieutenant Allen reports the Copper River not navigable, though it is navigated by the natives; he ascended its left bank to the mouth of the Slana, then traveling by the way of Lake Susloto across the divide (4,500 feet above the sea) to the Tanana River; that stream he reached in approximate latitude $63^{\circ} 24'$, and longitude about $143^{\circ} 40'$, as taken from his chart of the route. From this place he indicates two trails, and from a point a few miles down the Tanana a third, all leading toward the White River. Or the trail may follow up the Copper, Chittyua and Chittestone rivers, thence across the Scoloi Pass to the head-waters of the White River.

Captain P. H. Ray, United States Army, who has been sent by the Government into the Klondike for the purpose of making recommendations for the betterment of affairs there, reports "a practical route from the Tanana across the divide to the head of Cook's Inlet, via the head of Copper River," and expresses the opinion that "as soon as the development of the Territory will justify, this will be the shortest and most practicable route for railroad communication with the open sea. With rail communication from the head of Cook's Inlet to the Tanana the commerce of the whole Yukon Valley

could be controlled by routes lying wholly in our own territory." A company of American capitalists is considering the advisability of constructing a railroad along this route.

There is also a trail to the Tanana by way of the Copper and Slano River valleys through the Mentasta Pass. Trails also connect the Copper River and Sushnita rivers, and the latter with the Kuskokwim. The natives have regular camping-stations along the Copper River. It is about 110 miles from the head of canoe navigation on the Copper River to the head of navigation on the White River.

The distance by steamer from Seattle to Copper River is 1,150 miles, and from the mouth of Copper River to Dawson would be between 500 and 550 miles, following the windings of the streams and valleys. There are said to be no rapids on White River and plenty of timber along the route. Distances by this route are about as follows:

Mouth of Copper River to mouth of Chittuya

River.....	115 miles
Mouth of Chittuya River to Scoloi Pass.....	100 miles
Scoloi Pass to head of White River.....	30 miles
Head of White River (navigable for small boats).....	300 miles

545

There is also a pass back of Yakutat Bay reached by crossing over to and following up the Alsek River and crossing over to the White River, where the Copper River route is joined. There is an Indian trail over this route, and by it the distance from Sitka to Dawson is about 500 miles.

From a point, Unalaklik, on Norton Sound, where there is a Swedish Mission (35 miles direct, or 55 miles by the coast, from St. Michael), there is a trail only 50

miles long, followed by Lieutenant Allen, by the way of the Unalaklik and Autokakat rivers, to the Yukon, which it strikes nearly 400 miles from the latter's mouth.

In addition to these United States routes, there is also an inland Canadian route, which is said to possess some advantages, and might be called a sort of "back door" route. It follows the old Hudson Bay Company's main trail to the north. An advantageous starting-point would be St. Paul, Minnesota. In going by this route the traveler leaves the railroad at Edmonton, Northwest Territory; thence overland forty miles to Athabaska Landing by stage. There the prospector must provide himself with a canoe, and he will have continuous water passage by way of Athabaska Lake, Great Salt Lake and down the Mackenzie River to its mouth. From the mouth of the Mackenzie the Peel River is ascended, and then by portage across the Rocky Mountains to the Stewart River, which opens the way to the Klondike. The distances on this route, as given by the Hudson Bay Company and taken from railroad time-tables, are as follows:

St. Paul to Edmonton.....	1,232 miles
Edmonton to Athabaska Landing.....	40 miles
Athabaska Landing to Fort McMurray.....	240 miles
Fort McMurray to Fort Chippewa.....	185 miles
Fort Chippewa to Smith Landing.....	102 miles
Smith Landing to Fort Smith.....	16 miles
Fort Smith to Fort Resolution.....	194 miles
Fort Resolution to Fort Providence.....	168 miles
Fort Providence to Fort Simpson.....	161 miles
Fort Simpson to Fort Wrigley.....	136 miles
Fort Wrigley to Fort Norman.....	184 miles
Fort Norman to Fort Goodhope.....	174 miles

Fort Goodhope to Fort McPherson.....	282 miles
Fort McPherson to Dawson City (estimated)	<u>250 miles</u>

Total..... 3,364 miles

There are several portages on this route, it is said, ranging in distance from a few hundred yards in length to about forty miles. Sixty days would be necessary to reach Fort McPherson. For the trip, birch-bark canoes of almost any size up to three tons burden can be secured of the Indians at Athabaska; but in case they are used, Indian pilots should be taken along to manage them and keep them in repair. This trip requires about three months' time and costs in the neighborhood of \$300, exclusive of tools, food, clothing, etc.

There is another overland Canadian route from Ashcroft, a small trading-station on the Canadian Pacific Railroad about 250 miles from the coast, by wagon and pack-animals over the old telegraph trail to Lake Teslin, where boats must be secured to continue the journey by water to the Yukon country.

The distances, as near as can be learned, over this route, are:

St. Paul, Minn., to Ashcroft.....	1,571 miles
Ashcroft to Soda Creek.....	165 miles
Soda Creek to Quesnelle.....	60 miles
Quesnelle to Hazelton.....	365 miles
Hazelton to Nasse River.....	50 miles
Nasse River to Telegraph Creek.....	100 miles
Telegraph Creek to Lake Teslin.....	120 miles
Lake Teslin to Dawson City.....	<u>598 miles</u>

Total..... 3,029 miles

Various schemes, projecting railroads, trolley lines, over-head car lines, pack-horse lines and improved

wagon roads to the Alaska gold-fields, are talked of, but as yet few of them have assumed anything approaching definite shape, and only the developments of the future can determine what will result.

The exact amount of money required to get a passenger from the Pacific Coast to the Alaska gold-fields can not be definitely stated, as so much depends upon the route selected and the individual's idea of what is necessary; but from reports and estimates from a variety of the best sources, it seems certain that there will be required at least \$150 for transportation and \$100 more if the Yukon River route is selected; \$150 to \$200 for a mining outfit and a stock of provisions; then, prudence would suggest at least \$250 to provide against possible misfortune.

Heretofore communication between the outside world and the interior of Alaska has been uncertain and expensive, as letters were carried by private parties at a rate, it is reported, of \$1.00 per letter, but the Post Office Department* has established monthly service for all classes of mail matter between Juneau and Circle City (a distance of over 900 miles), and through coöperation with the Canadian Government an international exchange has been established between Dyea and Dawson City, with one round trip per month. The coast and river steamers carry the mail to and from the usual points touched. The extension and betterment of the service is contemplated to meet the requirement of any increased population, and through it the hardship of enforced non-intercourse with civilization will be greatly relieved.

*For list of Post Offices in Alaska see Appendix G.

CHAPTER IX.

MINERS' OUTFITS.*

"There is wisdom in preparation, for sorrow besets the path of the thoughtless."

Equipment for mining in Alaska is an important item, but little understood by amateur prospectors, and the character of its composition will materially affect results.

It must be borne in mind that the trip to the gold-fields, however plentiful the metal may be, must result in failure, unless the miner's health be preserved. He must see to it himself that his body is well and warmly clad, and properly nourished with wholesome food.

All reports agree that the game in the country can in no way be depended upon as a safe source of food-supply. In the spring of the year water-fowl appear in considerable abundance. Caribou, moose and mountain sheep and a few bear and some smaller animals are occasionally met with at all seasons.

Speaking upon this subject, Mr. William Ogilvie, who has spent several years in the Yukon country, says: "For animal food there are the caribou and the moose, but the moose are never within 30 or 40 miles of the mines, so that it takes two or three days' going from the camps to hunt them. There are, too, white mountain sheep, pure white in color, but otherwise resembling

*See Appendix D.

very much in appearance those once found in more southern latitudes, but with a finer horn, more finely curved. The caribou, although they roam over the land in vast herds, are migratory in their nature, and are very rarely found two successive seasons in the same place. The natural products of the country, as a food-supply, may be said to be valueless when compared with the demand which will soon exist for it there. It might, indeed, be said that all food will have to be imported. In the river are some small fish resembling the grayling, and the salmon annually make their way up as far as the cañon, some 2,000 miles from the sea."

In summer there is a variety and abundance of native berries, especially cranberries and "salmon" berries.

Alaska is, generally speaking, a healthy country. The diseases most frequently met with in the Yukon country are dyspepsia, anæmia, scurvy, caused by improperly cooked food, sameness of diet, overwork, want of fresh vegetables, over-heated and badly ventilated houses; rheumatism, pneumonia, bronchitis, inflammation of the bowels, or bladder, and other diseases brought on by exposure to wet and cold; debility and chronic diseases brought on by excesses. Venereal diseases are common, especially among the natives.

For healthy persons, pneumonia and scurvy are the most dreaded. The cause and symptoms of pneumonia are so well known that no descriptions are necessary. Scurvy results from the excessive dietary of cereals and preserved meats. Fresh vegetables and lime-juice are preventives, and also the cure,* but they act slowly.

*Alkaline salts, such as carbonate of soda, carbonate of potash and a variety of others, are also used as remedies, but they are liable to deteriorate and become worthless.

The symptoms of scurvy come on gradually, being recognized by failure of strength and exhaustion at slight exertion; the countenance becomes sallow or dusky, the eyes sunken, and constant pains are felt in all the muscles. After some weeks, utter prostration ensues; the mouth and gums become sore and the teeth drop out; the breath is extremely offensive; finally, dark spots and swellings appear on the body, with bleeding from the mucous membranes. Then painful and destructive ulcers break out on the limbs; finally, diarrhoea, or pulmonary or kidney trouble, may prove fatal. But even in desperate cases a return to a diet of fresh vegetables, or even lime-juice, will effect a cure. Lime-juice has driven scurvy from the ocean, where it was formerly the dread of every long voyage.

Old miners have learned from experience to value health more than gold, and they therefore spare no expense in procuring the best and most varied outfit of food that can be obtained.

The severity of the climate will call for extra heavy clothing and increase the quantity of food necessary. As to what is required, it is better to be guided by the testimony of those who have been there than to rely upon the opinions of so-called experts at home. Opinions as to exactly what articles constitute an outfit are as various as the individuals who utter them. Hundreds of men who have had experience in this far northern climate have made up what they consider practical lists of food necessities, which have appeared in the public press, and any one of them, doubtless, would meet the strict requirements of necessity. An analysis of twenty or more of such lists showed that individual tastes had largely governed in the choice and quantity of articles.

Their composition differed greatly, and varied in quantity from three and one-half to five and one-half pounds per man per day. In selecting food articles those highly carbonaceous in character, such as salt pork, beans, flour, corn meal, oat meal, etc., should predominate. With the scarcity of fresh meat, vegetables and fruit, the danger of scurvy is increased, and anti-scorbutics should be provided in liberal proportions. Tea, in the main, is preferable to coffee, owing to its lightness and the ease with which it is prepared. One pound of tea is about equal for drinking purposes to seven pounds of coffee, though the latter possesses some food-value, while tea is only a stimulant. Chocolate is very palatable and exceedingly nourishing. In place of sugar, saccharin may, if desired, be substituted, one ounce of saccharin being equal in sweetening power to thirty-three and one-half pounds of sugar. The only advantage gained, however, by such substitution would be a reduction in weight of baggage, as saccharin only sweetens, while sugar feeds.

The *Chicago Record's* "Klondike Guide" states that :

"The outfits purchased in Seattle by twenty experienced miners on their way to the Klondike are regarded as models by miners and prospectors who have returned from that region. The twenty men first divided themselves into parties of four men each, intending to have a boat for each party, as well as a tent and various smaller articles. The main items of their outfits are as follows, the items, when not otherwise mentioned, being for one man :

Bacon.....	pounds, 150
Flour.....	pounds, 250
Rolled oats.....	pounds, 25
Beans.....	pounds, 100



VIEW UP DYEA INLET (in May).



GASTINEAU CHANNEL AND CITY OF JUNEAU (from Stake Point).

ALASKA.

105

Tea.....	pounds,	10
Coffee.....	pounds,	10
Sugar.....	pounds,	40
Dried potatoes.....	pounds,	25
Dried onions.....	pounds,	2
Salt.....	pounds,	10
Pepper.....	pounds,	1
Dried fruit.....	pounds,	75
Baking powder.....	pounds,	4
Soda.....	pounds,	2
Evaporated vinegar.....	pounds,	$\frac{1}{2}$
Compressed soup.....	ounces,	12
Mustard.....	can,	1
Rice.....	pounds,	40
Matches (for 4 men).....	tin,	1
Stove for 4 men,		
Gold pan for each,		
Set of granite buckets,		
Large bucket,		
Knife,		
Fork,		
Spoon,		
Cup,		
Plate,		
Frying-pan,		
Coffee- and tea-pot,		
Scythe-stone,		
2 picks and 1 shovel,		
1 whip-saw,		
Pack-strap,		
2 axes for 4 men, and 1 extra handle,		
6 8-inch files and 2 taper files for the party,		
Drawing-knife, brace and bits, jack-plane and hammer,		
rip-saw, pocket rule, for the party,		
200 feet of $\frac{3}{8}$ -inch rope,		
8 pounds of pitch and 5 pounds of oakum, for 4 men,		

Nails, 5 pounds each of 6-, 8-, 10- and 12-penny, for 4 men,
 Shoemaker's thread,
 Shoemaker's awl,
 Gum for patching gum boots,
 Tent, 10 x 12 feet, for 4 men,
 Canvas for wrapping,
 2 oil blankets to each boat,
 5 yards of mosquito netting for each man,
 3 suits heavy underwear,
 1 heavy Mackinaw coat,
 2 pairs heavy Mackinaw trousers,
 ½ dozen pairs heavy wool socks,
 ½ dozen pairs heavy wool mittens,
 2 heavy undershirts,
 2 pairs heavy snow-proof rubber boots,
 2 pairs shoes,
 2 pairs blankets,
 4 towels,
 2 pairs overalls,
 1 suit oil clothing,
 2 rubber blankets.

" Besides these things, each man procures a small assortment of medicines, and he is provided with several changes of summer clothing. The following is a list of medicines for four men:

25 cents' worth Cascara Sagrada bark,*
 1 bottle good whiskey,
 3 boxes carbolized salve,
 1 bottle of arnica.

" The above outfit costs, in round figures, as follows :

Groceries.....	\$40.00
Clothing.....	50.00
Hardware.....	50.00
Total.....	\$140.00

*The same drug in form of tablets is preferable.

"The fare to Dyea and incidentals brought the expenses of these twenty prospectors up to about \$175 each. They believe that they are well supplied for a year's stay in the land of the midnight sun."

To the above list, carefully prepared as it is, should be added colored goggles, to prevent snow-blindness from the intense glare; this is especially necessary in the spring of the year. A rifle, and perhaps a shot-gun too, with plenty of ammunition, together with fish-lines and hooks, will assist materially in adding to and varying the food-supply. A fur-lined sleeping-bag is a great comfort in cold climates. Water-proof sacks to further protect clothing and provisions from the weather will more than save their cost, to say nothing of the increased comfort experienced through reaching camp with dry equipage. To the medicines should certainly be added one-half ounce quinine sulphate, four ounces Jamaica ginger, four ounces laudanum, some lint bandages and bleeding-powder.

The traveler should be provided with the best map obtainable of the country and a reliable compass; the latter, however, must be used with caution, as the variation of the needle is from 30° to 35° to the east in the territory most likely to be traversed (Dyea to Dawson).

While the above is given merely as a suggestion, certain it is that no party so provided would run much danger of suffering through lack of preparation.

The United States Army emergency ration for one man for one day, based upon the scientific principles governing the repair of waste tissues, includes the following components:

	OUNCES.
Hard bread.....	16.
Bacon.....	10.
Pea meal.....	4.
Coffee, roasted and ground, with 4 grains saccharin (or tea $\frac{1}{2}$ ounce, with 4 grains saccharin).	2.
Salt.....	.64
Pepper.....	.04
Tobacco.....	.5
Net weight, with coffee.....	33.18
Net weight, with tea.....	31.68

While this ration is capable of maintaining the human body in a healthy condition, under severe physical strain, for an indefinite period, it is not issued for an emergency expected to last more than five days, and the quantity intended for that period may be made to last twice the time, without material deterioration of the body; its continued use, without the addition of anti-scorbutics, would, however, tend to the production of scurvy.

A better form of tent than the 10 x 12 rectangular affair is the United States Army conical tent, made of 12-ounce duck. It is very commodious, easy to pitch, staunch when in position, and is so arranged that the pipe for the stove serves as the center-pole. Camp cooking is an art acquired only through experience, and as some sort of stove seems necessary, it would be well to select some form of camp cooking-stove which is easily transported and will answer equally well out of doors or in a tent or building. All the articles requisite for mining and subsistence could possibly be purchased at Dawson City, Forty-Mile or one of the trading-posts, but there is no certainty in the matter, and if reports be true, prices there range from two to five times the prices

charged for the same articles in Seattle, Juneau, or other Pacific coast outfitting points. The foregoing list of supplies is prepared for those intending entering the fields by way of the passes back of Dyea. If the trip is made by water, the oakum and pitch may be omitted; also some of the tools.

The boats that run up the Yukon are operated by companies who have storehouses in Circle City, Fort Cudahy, Forty-Mile, Dawson City and other points. These transportation and trading companies will not, it is said, transport food-supplies for their passengers, and for that reason they limit baggage to 150 pounds, as elsewhere stated, and the traveler is obliged to buy his outfit at one of the trading-stores in the country. It is understood that the Commercial Company has decided to carry freight for the travelers next year, which, if true, would materially lessen the expense to the prospector.

The greatest demand for any particular thing on the Juneau route seems to be for boats. Heretofore, prospectors have had to build their own boats after reaching the head-waters of the Yukon, either from lumber which they carried along, or which they whip-sawed from the standing timber for the purpose. At present half a dozen companies are said to be working night and day on knock-down boats. It is said that one of these boats weighs about 200 pounds, costs \$18, and will carry a ton of freight. They are so constructed that they can be taken apart and packed, no piece being longer than seven feet. Another builder is making galvanized iron boats, the sections of which nest, and when assembled are held together by small bolts.

Such hardships and exposures as are sure to be met with in the Alaskan gold-fields should not enter into the

life of a civilized woman, but as there are already several at Dawson City and other points, and the characteristic heroism and devotion of their sex are sure to prompt others to attempt the journey, either with their husbands or to seek fortune single-handed, a word relative to what should constitute their proper outfit is not thought to be out of place. In addition to such articles as are necessary to both sexes, the following are suggested particularly for women's comfort :

A medicine chest, filled on the advice of a good physician,

1 small pillow,

1 fur robe,

1 warm shawl,

1 easy-fitting fur coat with hood,

3 warm, loose-woven woolen dresses, with skirts to the knees only, to be worn with bloomers,

3 suits of heavy all-wool underwear,

3 warm flannel night-dresses,

4 pairs knitted woolen stockings,

1 pair rubber boots,

2 pairs fur gloves,

2 pairs fur-seal moccasins,

2 pairs wet-weather moccasins, called in the country " mukluks,"

1 small roll flannel, for in-soles, wrapping the feet and for bandages,

2 gingham aprons to cover the entire front of the dress,

2 light shirt-waists for summer wear,

A sewing kit,

Such toilet articles as are absolutely necessary, including some skin unguent, to protect the face in the severe cold.

The furs may be purchased on entering Alaska, but wise ones advise taking them along.

The ordinary dress may be worn to the end of the steamboat journey, when civilized garb will have to be exchanged for one designed to meet the special requirements of a peculiar life. Trunks are not the vehicles to transport baggage in. It is much better to pack effects in strong, soft canvas telescopes, or make them into bundles covered with canvas, and in all cases protected from the weather by oil-skin blankets.

Mr. Harry De Windt, the explorer, who went through the Klondike region in 1896, says:

"There is plenty of room for all between the Klondike and the Cassiar. Let the gold-seekers take their time and make prudent preparation. The ultimate result will doubtless be that a little-known region will be dotted with thriving cities, and the shouts of triumph from the fortunate few will drown the dying wails of the many who fail."

The present well-known gold-fields are partly in British territory, and all supplies crossing the boundary line are subject to a tariff tax by the Canadian Government. It is understood that it is not the intention to collect duty on personal outfits, but only on articles imported for commercial purposes and on machinery, etc.; but, as the undeniable right exists, gold-seekers must be prepared to pay to the Canadian customs officials an entrance tax. For that reason there is inserted a table of rates for the principal articles composing a miner's outfit.

CANADIAN CUSTOMS RATES.

Shovels, spades, picks, etc., 25 per cent.

Horses, 25 per cent.

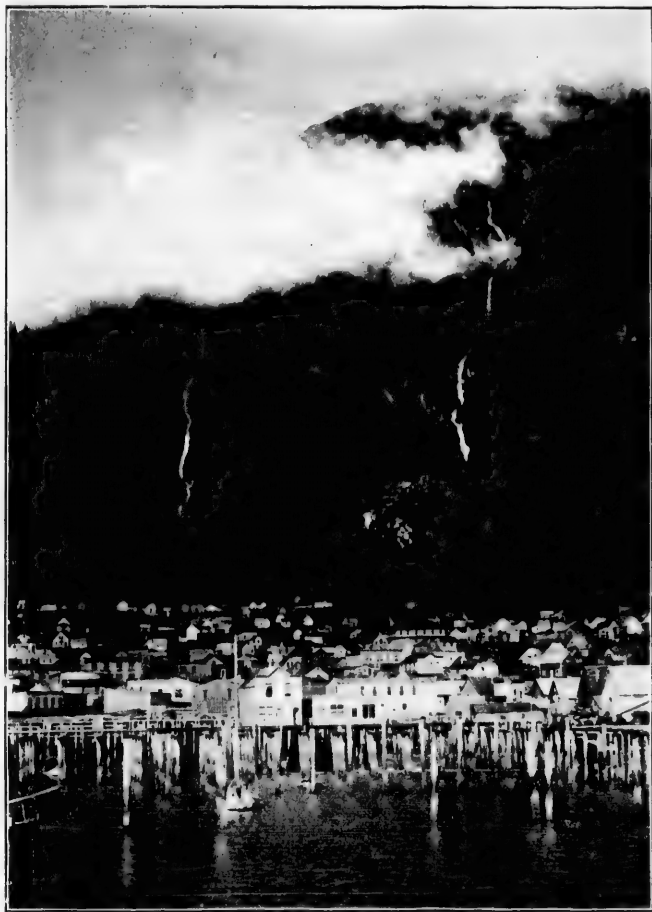
- Axes, hatchets and adzes, 25 per cent.
Blankets, 5 cents per pound and 25 per cent.
Boats and ship sails, 25 per cent.
Rubber boots, 25 per cent.
Boots and shoes, 25 per cent.
Breadstuffs—viz., grain, flour and meal of all kinds, 20 per cent.
Butter, 4 cents per pound.
Candles, 28 per cent.
Cartridges and ammunition, 30 per cent.
Cheese, 3 cents per pound.
Cigars, cigarettes, \$2 per pound and 20 per cent.
Cloth socks, 10 cents per dozen pairs and 35 per cent.
Knitted goods of every description, 35 per cent.
Ready-made goods, partially of wool, 30 per cent.
Water-proof clothing, 35 per cent.
Coffee, condensed, 30 per cent.
Coffee, roasted, 2 cents per pound and 10 per cent.
Coffee substitutes, 2 cents per pound; extracts, 3 cents per pound.
Condensed milk, 3 cents per pound.
Cotton knitted goods, 35 per cent.
Crowbars, 35 per cent.
Cutlery, 35 per cent.
Dogs, 20 per cent.
Drugs, 20 per cent.
Duck, 20 to 30 per cent.
Earthenware, 30 per cent.
Edge tools, 35 per cent.
Fire-arms, 20 per cent.
Fish-hooks and lines, 25 per cent.
Wheat flour, 75 cents per barrel.
Rye flour, 50 cents per barrel.



COPPER RIVER BELOW MILES' GLACIER.



HEAD OF CHILKAT INLET—PYRAMID HARBOR (in May).



JUNEAU WATER FRONT.



SKAGWAY CANYON (Looking toward Taiya Inlet).

Fruit, dried, 25 per cent.
Fruits: prunes, raisins, currants, 1 cent per pound.
Fruits: jellies, jams and preserves, 3 cents per pound.
Fur caps, muffs, capes, coats, 25 per cent.
Furniture, 30 per cent.
Galvanized iron or tinware, 30 per cent.
Jerseys, knitted, 35 per cent.
Lard, 2 cents per pound.
Linen clothing, 32½ per cent.
Maps and charts, 20 per cent.
Meats, canned, 25 per cent.
Meats, in barrel, 2 cents per pound.
Oat meal, 20 per cent.
Oilcloth, 30 per cent.
Pipes, 25 per cent.
Potatoes, in barrel, 15 cents per bushel.
Powder, mining and blasting, 2 cents per pound.
Rice, 1¼ cents per pound.
Sacks or bags, 20 per cent.
Saw-mills, portable, 30 per cent.
Sugar, 64 cents per 100 pounds.
Surgical instruments, 15 per cent.
Tents, 32½ per cent.

APPENDIX A.

UNITED STATES MINING LAWS.

UNITED STATES MINING LAWS AND REGULATIONS THEREUNDER.*

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
December 10, 1891.

GENTLEMEN: Your attention is invited to the Revised Statutes of the United States and the amendments thereto in regard to

MINING LAWS AND MINING RESOURCE.

TITLE XXXII, CHAPTER 6.

SECTION 2318. In all cases lands valuable for minerals shall be reserved from sale except as otherwise expressly directed by law.

SEC. 2319. All valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase, by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the United States.

SEC. 2320. Mining-claims upon veins or lodes of

*Department of the Interior, General Land Office, Washington, May 16, 1893.—This circular is reissued for the information and benefit of those concerned.—S. W. Lamoreux, Commissioner.

quartz or other rock in place bearing gold, silver, cinabar, lead, tin, copper or other valuable deposits, heretofore located, shall be governed as to length along the vein or lode by the customs, regulations and laws in force at the date of their location. A mining-claim located after the tenth day of May, eighteen hundred and seventy-two, whether located by one or more persons, may equal, but shall not exceed, one thousand five hundred feet in length along the vein or lode; but no location of a mining-claim shall be made until the discovery of the vein or lode within the limits of the claim located. No claim shall extend more than three hundred feet on each side of the middle of the vein at the surface, nor shall any claim be limited by any mining regulation to less than twenty-five feet on each side of the middle of the vein at the surface, except where adverse rights existing on the tenth day of May, eighteen hundred and seventy-two, render such limitation necessary. The end-lines of each claim shall be parallel to each other.

SEC. 2321. Proof of citizenship, under this chapter, may consist in the case of an individual, of his own affidavit thereof; in the case of an association of persons, unincorporated, of the affidavit of their authorized agent, made on his own knowledge, or upon information and belief; and in the case of a corporation organized under the laws of the United States, or of any State or Territory thereof, by the filing of a certified copy of their charter or certificate of incorporation.

SEC. 2322. The locators of all mining locations heretofore made or which shall hereafter be made, on any mineral vein, lode, or ledge, situated on the public domain, their heirs and assigns, where no adverse claim exists on the tenth day of May, eighteen hundred and seventy-two, so long as they comply with the laws of the United States, and with State, Territorial, and local regulations not in conflict with the laws of the United States governing their possessory title, shall have the exclusive right of possession and enjoyment of all the surface included within the lines of their locations, and of

all veins, lodes and ledges throughout their entire depth, the top or apex of which lies inside of such surface-lines extended downward vertically, although such veins, lodes or ledges may so far depart from a perpendicular in their course downward as to extend outside the vertical side-lines of such surface locations. But their right of possession to such outside parts of such veins or ledges shall be confined to such portions thereof as lie between vertical planes drawn downward, as above described, through the end-lines of their locations, so continued in their own direction that such planes will intersect such exterior parts of such veins or ledges. And nothing in this section shall authorize the locator or possessor of a vein or lode which extends in its downward course beyond the vertical lines of his claim to enter upon the surface of a claim owned or possessed by another.

SEC. 2323. Where a tunnel is run for the development of a vein or lode, or for the discovery of mines, the owners of such tunnel shall have the right of possession of all veins or lodes within three thousand feet from the face of such tunnel on the line thereof, not previously known to exist, discovered in such tunnel, to the same extent as if discovered from the surface; and locations on the line of such tunnel of veins or lodes not appearing on the surface, made by other parties after the commencement of the tunnel, and while the same is being prosecuted with reasonable diligence, shall be invalid; but failure to prosecute the work on the tunnel for six months shall be considered as an abandonment of the right to all undiscovered veins on the line of such tunnel.

SEC. 2324. The miners of each mining-district may make regulations not in conflict with the laws of the United States, or with the laws of the State or Territory in which the district is situated, governing the location, manner of recording, amount of work necessary to hold possession of a mining-claim, subject to the following requirements: The location must be distinctly marked on the ground so that its boundaries can

be readily traced. All records of mining-claims hereafter made shall contain the name or names of the locators, the date of the location, and such a description of the claim or claims located by reference to some natural object or permanent monument as will identify the claim. On each claim located after the tenth day of May, eighteen hundred and seventy-two, and until a patent has been issued therefor, not less than one hundred dollars' worth of labor shall be performed or improvements made during each year. On all claims located prior to the tenth day of May, eighteen hundred and seventy-two, ten dollars' worth of labor shall be performed or improvements made by the tenth day of June, eighteen hundred and seventy-four, and each year thereafter, for each one hundred feet in length along the vein until a patent has been issued therefor; but where such claims are held in common, such expenditure may be made upon any one claim; and upon a failure to comply with these conditions, the claim or mine upon which such failure occurred shall be open to relocation in the same manner as if no location of the same had ever been made, provided that the original locators, their heirs, assigns, or legal representatives, have not resumed work upon the claim after failure and before such location. Upon the failure of any one of several co-owners to contribute his proportion of the expenditures required hereby, the co-owners who have performed the labor or made the improvements may, at the expiration of the year, give such delinquent co-owner personal notice in writing or notice by publication in the newspaper published nearest the claim, for at least once a week for ninety days, and if at the expiration of ninety days after such notice in writing or by publication such delinquent should fail or refuse to contribute his proportion of the expenditure required by this section, his interest in the claim shall become the property of his co-owners who have made the required expenditures.

SEC. 2325. A patent for any land claimed and located for valuable deposits may be obtained in the fol-

lowing manner: Any person, association, or corporation authorized to locate a claim under this chapter, having claimed and located a piece of land for such purposes, who has or have complied with the terms of this chapter, may file in the proper land-office an application for a patent, under oath, showing such compliance, together with a plat and field-notes of the claim or claims in common, made by or under the direction of the United States Surveyor-General, showing accurately the boundaries of the claim or claims, which shall be distinctly marked by monuments on the ground, and shall post a copy of such plat, together with a notice of such application for a patent, in a conspicuous place on the land embraced in such plat previous to the filing of the application for a patent, and shall file an affidavit of at least two persons that such notice has been duly posted, and shall file a copy of the notice in such land office, and shall thereupon be entitled to a patent for the land, in the manner following: The register of the land-office, upon the filing of such application, plat, field-notes, notices and affidavits, shall publish a notice that such application has been made, for the period of sixty days, in a newspaper to be by him designated as published nearest to such claim; and he shall also post such notice in his office for the same period. The claimant at the time of filing this application, or at any time thereafter, within the sixty days of publication, shall file with the register a certificate of the United States Surveyor-General that five hundred dollars' worth of labor has been expended or improvements made upon the claim by himself or grantors; that the plat is correct, with such further description by such reference to natural objects or permanent monuments as shall identify the claim, and furnish an accurate description, to be incorporated in the patent. At the expiration of the sixty days of publication, the claimant shall file his affidavit, showing that the plat and notice have been posted in a conspicuous place on the claim during such period of publication. If no adverse claim shall have been filed with the register and the receiver of the proper land-office at the expiration of the

sixty days of publication, it shall be assumed that the applicant is entitled to a patent upon the payment to the proper officer of five dollars per acre, and that no adverse claim exists; and thereafter no objection from third parties to the issuance of a patent shall be heard, except it be shown that the applicant has failed to comply with the terms of this chapter.

SEC. 2326. Where an adverse claim is filed during the period of publication, it shall be upon oath of the person or persons making the same, and shall show the nature, boundaries and extent of such adverse claim, and all proceedings, except the publication of notice and making and filing of the affidavit thereof, shall be stayed until the controversy shall have been settled or decided by a court of competent jurisdiction, or the adverse claim waived. It shall be the duty of the adverse claimant, within thirty days after filing his claim, to commence proceedings in a court of competent jurisdiction, to determine the question of the right of possession, and prosecute the same with reasonable diligence to final judgment; and a failure so to do shall be a waiver of his adverse claim. After such judgment shall have been rendered, the party entitled to the possession of the claim, or any portion thereof, may, without giving further notice, file a certified copy of the judgment-roll with the register of the land-office, together with the certificate of the surveyor-general that the requisite amount of labor has been expended or improvements made thereon, and the description required in other cases, and shall pay to the receiver five dollars per acre for his claim, together with the proper fees, whereupon the whole proceedings and the judgment-roll shall be certified by the register to the Commissioner of the General Land Office, and a patent shall issue thereon for the claim, or such portion thereof as the applicant shall appear, from the decision of the court, to rightly possess. If it appears from the decision of the court that several parties are entitled to separate and different portions of the claim, each party may pay for his portion of the claim with the proper fees, and file the certificate and description by the sur-



SUMMER SCENE IN COPPER RIVER.



SALMON CANNERY—PYRAMID HARBOR (in May).

veyor-general, whereupon the register shall certify the proceedings and judgment-roll to the Commissioner of the General Land Office, as in the preceding case, and patents shall issue to the several parties according to their respective rights. Nothing herein contained shall be construed to prevent the alienation of a title conveyed by a patent for a mining-claim to any person whatever.

SEC. 2327. The description of vein or lode claims, upon surveyed lands, shall designate the location of the claim with reference to the lines of the public surveys, but need not conform therewith; but where a patent shall be issued for claims upon unsurveyed lands, the surveyor-general, in extending the surveys, shall adjust the same to the boundaries of such patented claim, according to the plat or description thereof, but so as in no case to interfere with or change the location of any such patented claim.

SEC. 2328. Applications for patents for mining-claims under former laws now pending may be prosecuted to a final decision in the General Land Office; but in such cases where adverse rights are not affected thereby, patents may issue in pursuance of the provisions of this chapter; and all patents for mining-claims upon veins or lodes heretofore issued shall convey all the rights and privileges conferred by this chapter where no adverse rights existed on the tenth day of May, eighteen hundred and seventy-two.

SEC. 2329. Claims usually called "placers," including all forms of deposit, excepting veins of quartz, or other rock in place, shall be subject to entry and patent, under like circumstances and conditions, and upon similar proceedings, as are provided for vein or lode claims; but where the lands have been previously surveyed by the United States, the entry in its exterior limits shall conform to the legal subdivisions of the public lands.

SEC. 2330. Legal subdivisions of forty acres may be subdivided into ten-acre tracts; and two or more persons, or associations of persons, having contiguous claims of any size, although such claims may be less than ten acres

each, may make joint entry thereof; but no location of a placer-claim, made after the ninth day of July, eighteen hundred and seventy, shall exceed one hundred and sixty acres for any one person or association of persons, which location shall conform to the United States surveys; and nothing in this section contained shall defeat or impair any bona fide pre-emption or homestead claim upon agricultural lands, or authorize the sale of the improvements of any bona fide settler to any purchaser.

SEC. 2331. Where placer-claims are upon surveyed lands, and conform to legal subdivisions, no further survey or plat shall be required, and all placer-mining claims located after the tenth day of May, eighteen hundred and seventy-two, shall conform as near as practicable with the United States system of public-land surveys, and the rectangular subdivisions of such surveys, and no such location shall include more than twenty acres for each individual claimant; but where placer-claims can not be conformed to legal subdivisions, survey and plat shall be made as on unsurveyed lands; and where by the segregation of mineral lands in any legal subdivision a quantity of agricultural land less than forty acres remains, such fractional portion of agricultural land may be entered by any party qualified by law, for homestead or pre-emption purposes.

SEC. 2332. Where such person or association, they and their grantors, have held and worked their claims for a period equal to the time prescribed by the statute of limitations for mining-claims of the State or Territory where the same may be situated, evidence of such possession and working of the claims for such period shall be sufficient to establish a right to a patent thereto under this chapter, in the absence of any adverse claim; but nothing in this chapter shall be deemed to impair any lien which may have attached in any way whatever to any mining-claim or property thereto attached prior to the issuance of a patent.

SEC. 2333. Where the same person, association, or corporation is in possession of a placer-claim, and also a vein or lode included within the boundaries thereof ap-

plication shall be made for a patent for the placer-claim, with the statement that it includes such vein or lode, and in such a case a patent shall issue for the placer-claim, subject to the provisions of this chapter, including such vein or lode, upon the payment of five dollars per acre for such vein or lode claim, and twenty-five feet of surface on each side thereof. The remainder of the placer-claim, or any placer-claim not embracing any vein or lode-claim, shall be paid for at the rate of two dollars and fifty cents per acre, together with all costs of proceedings; and where a vein or lode, such as is described in section twenty-three hundred and twenty, is known to exist within the boundaries of a placer-claim, an application for a patent for such placer-claim which does not include an application for the vein or lode-claim shall be construed as a conclusive declaration that the claimant of the placer-claim has no right of possession of the vein or lode claim; but where the existence of a vein or lode in a placer claim is not known, a patent for the placer-claim shall convey all valuable mineral and other deposits within the boundaries thereof.

SEC. 2334. The surveyor-general of the United States may appoint in each land-district containing mineral lands as many competent surveyors as shall apply for appointment to survey mining-claims. The expenses of the survey of vein or lode claims, and the survey and sub-division of placer-claims into smaller quantities than one hundred and sixty acres, together with the cost of publications of notices, shall be paid by the applicants, and they shall be at liberty to obtain the same at the most reasonable rates, and they shall also be at liberty to employ any United States deputy surveyor to make the survey. The Commissioner of the General Land Office shall also have power to establish the minimum charges for surveys and publication of notices under this chapter; and, in case of excessive charges for publication, he may designate any newspaper published in a land-district where mines are situated for the publication of mining-notices in such district, and fix the rates to be charged by such paper; and, to the end that

the Commissioner may be fully informed on the subject, each applicant shall file with the register a sworn statement of all charges and fees paid by such applicant for publication and surveys, together with all fees and money paid the register and the receiver of the land-office, which statement shall be transmitted, with the other papers in the case, to the Commissioner of the General Land Office.

SEC. 2335. All affidavits required to be made under this chapter may be verified before any officer authorized to administer oaths within the land-district where the claims may be situated, and all testimony and proofs may be taken before any such officer, and, when duly certified by the officer taking the same, shall have the same force and effect as if taken before the register and receiver of the land-office. In cases of contest as to the mineral or agricultural character of land, the testimony and proofs may be taken as herein provided on personal notice of at least ten days to the opposing party; or if such party cannot be found, then by publication of at least once a week for thirty days in a newspaper, to be designated by the register of the land-office as published nearest to the location of such land; and the register shall require proof that such notice has been given.

SEC. 2336. Where two or more veins intersect or cross each other, priority of title shall govern, and such prior location shall be entitled to all ore or mineral contained within the space of intersection; but the subsequent location shall have the right of way through the space of intersection for the purposes of the convenient working of the mine. And where two or more veins unite, the oldest or prior location shall take the vein below the point of union, including all the space of intersection.

SEC. 2337. Where non-mineral land not contiguous to the vein or lode is used or occupied by the proprietor of such vein or lode for mining or milling purposes, such non-adjacent surface-ground may be embraced and included in an application for a patent for such vein or

lode, and the same may be patented therewith, subject to the same preliminary requirements as to survey and notice as are applicable to veins or lodes; but no location hereafter made of such non-adjacent land shall exceed five acres, and payment for the same must be made at the same rate as fixed by this chapter for the superficies of the lode. The owner of a quartz-mill or deduction works, not owning a mine in connection therewith, may also receive a patent for his mill-site, as provided in this section.

SEC. 2338. As a condition of sale, in the absence of necessary legislation by Congress, the local legislature of any State or Territory may provide rules for working mines, involving easements, drainage and other necessary means to their complete development; and those conditions shall be fully expressed in the patent.

SEC. 2339. Whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws and the decisions of courts the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes herein specified is acknowledged and confirmed; but whenever any person, in the construction of any ditch or canal, injures or damages the possession of any settler on the public domain, the party committing such injury or damage shall be liable to the party injured for such injury or damage.

SEC. 2340. All patents granted, or pre-emption or homesteads allowed, shall be subject to any vested and accrued water-rights, or rights to ditches and reservoirs used in connection with such water-rights, as may have been acquired under or recognized by the preceding section.

SEC. 2341. Whenever, upon the lands heretofore designated as mineral lands, which have been excluded from survey and sale, there have been homesteads made by citizens of the United States, or persons who have de-

clared their intention to become citizens, which homesteads have been made, improved and used for agricultural purposes, and upon which there have been no valuable mines of gold, silver, cinnabar or copper discovered, and which are properly agricultural lands, the settlers or owners of such homesteads shall have a right of pre-emption thereto, and shall be entitled to purchase the same at the price of one dollar and twenty-five cents per acre, and in quantity not to exceed one hundred and sixty acres; or they may avail themselves of the provisions of chapter five of this title, relating to "Homesteads."

SEC. 2342. Upon the survey of the lands described in the preceding section, the Secretary of the Interior may designate and set apart such portions of the same as are clearly agricultural lands, which lands shall thereafter be subject to pre-emption and sale as other public lands, and be subject to all the laws and regulations applicable to the same.

SEC. 2343. The President is authorized to establish additional land-districts and to appoint the necessary officers under existing laws wherever he may deem the same necessary for the public convenience in executing the provisions of this chapter.

SEC. 2344. Nothing contained in this chapter shall be construed to impair, in any way, rights or interests in mining property acquired under existing laws; nor to affect the provisions of the act entitled "An act granting to A. Sutro the right of way and other privileges to aid in the construction of a draining and exploring tunnel to the Comstock lode, in the State of Nevada," approved July twenty-five, eighteen hundred and sixty-six.

SEC. 2345. The provisions of the preceding sections of this chapter shall not apply to the mineral lands situated in the states of Michigan, Wisconsin and Minnesota, which are declared free and open to exploration and purchase, according to legal sub-divisions, in like manner as before the tenth day of May, eighteen hundred and seventy-two. And any *bona fide* entries of such lands within the states named since the tenth

of May, eighteen hundred and seventy-two may be patented without reference to any of the foregoing provisions of this chapter. Such lands shall be offered for public sale in the same manner, at the same minimum price and under the same rights of pre-emption as other public lands.

SEC. 2346. No act passed at the first session of the thirty-eighth Congress, granting lands to states or corporations to aid in the construction of roads or for other purposes, or to extend the time of grants made prior to the thirtieth day of January, eighteen hundred and sixty-five, shall be so construed as to embrace mineral lands, which in all cases are reserved exclusively to the United States, unless otherwise specially provided in the act or acts making the grant.

REPEAL PROVISIONS.

TITLE LXXIV.

SEC. 5595. The foregoing seventy-three titles embrace the statutes of the United States general and permanent in their nature in force on the 1st day of December, one thousand eight hundred and seventy-three, as revised and consolidated by commissioners appointed under an act of Congress, and the same shall be designated and cited as The Revised Statutes of the United States.

SEC. 5596. All acts of Congress passed prior to said first day of December, one thousand eight hundred and seventy-three, any portion of which is embraced in any section of said revision, are hereby repealed, and the section applicable thereto shall be in force in lieu thereof; all parts of such acts not contained in such revision, having been repealed or superseded by subsequent acts, or not being general and permanent in their nature: *Provided*, That the incorporation into such revision of any general and permanent provision, taken from an act making appropriations, or from an act containing other provisions of a private, local or temporary character shall not repeal or in any way

affect any appropriation, local or temporary character, contained in any of said acts, but the same shall remain in force; and all acts of Congress passed prior to said last-named day, no part of which are embraced in said revision, shall not be affected or changed by its enactment.

SEC. 5597. The repeal of the several acts embraced in said revision shall not affect any act done, or any right accruing or accrued, or any suit or proceeding had or commenced in any civil cause before the said repeal, but all rights and liabilities under said acts shall continue, and may be enforced in the same manner as if said repeal had not been made; nor shall said repeal in any manner affect the right to any office or change the term or tenure thereof.

SEC. 5598. All offenses committed and all penalties or forfeitures incurred under any statute embraced in said revision prior to said repeal, may be prosecuted and punished in the same manner and with the same effect as if said repeal had not been made.

SEC. 5599. All acts of limitation, whether applicable to civil causes and proceedings, or to the prosecution of offenses, or for the recovery of penalties or forfeitures embraced in said revision and covered by said repeal shall not be affected thereby, but all suits, proceedings or prosecutions, whether civil or criminal, for causes arising, or acts done or committed prior to said repeal, may be commenced and prosecuted within the same time as if said repeal had not been made.

SEC. 5600. The arrangement and classification of the several sections of the revision have been made for the purpose of a more convenient and orderly arrangement of the same, and therefore no inference or presumption of a legislative construction is to be drawn by reason of the Title under which any particular section is placed.

SEC. 5601. The enactment of the said revision is not to affect or repeal any act of Congress passed since the first day of December, one thousand eight hundred and seventy-three, and all acts passed since that

date are to have full effect as if passed after the enactment of this revision, and so far as such acts vary from or conflict with any provision contained in said revision they are to have effect as subsequent statutes, and as repealing any portion of the revision inconsistent therewith.

Approved June 22, 1874.

AN ACT to amend the act entitled "An act to promote the development of the mining resources of the United States," passed May tenth, eighteen hundred and seventy-two.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the provisions of the fifth section of the act entitled "An act to promote the development of the mining resources of the United States," passed May tenth, eighteen hundred and seventy-two, which requires expenditures of labor and improvements on claims located prior to the passage of said act are hereby so amended that the time for the first annual expenditure on claims located prior to the passage of said act shall be extended to the first day of January, eighteen hundred and seventy-five.

Approved, June 6, 1874 (18 Stat., 61).

AN ACT to amend section two thousand three hundred and twenty-four of the Revised Statutes, relating to the development of the mining resources of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section two thousand three hundred and twenty-four of the Revised Statutes be, and the same is hereby amended so that where a person or company has or may run a tunnel for the purpose of developing a load or lodes, owned by said person or company, the money so expended in said tunnel shall be taken and considered as expended on said lode or lodes, whether located prior to or since the passage of said act, and such person or company shall not be required to perform work

on the surface of said lode or lodes in order to hold the same as required by said act.

Approved February 11, 1875 (18 Stat., 315).

AN ACT to exclude the States of Missouri and Kansas from the provisions of the act of Congress entitled "An act to promote the development of the mining resources of the United States," approved May tenth, eighteen hundred and seventy-two.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That within the States of Missouri and Kansas deposits of coal, iron, lead, or other mineral be, and they are hereby, excluded from the operation of the act entitled "An act to promote the development of the mining resources of the United States," approved May tenth, eighteen hundred and seventy-two, and all lands in said States shall be subject to disposal as agricultural lands.

Approved May 5, 1876 (19 Stat., 52).

AN ACT authorizing the citizens of Colorado, Nevada and the Territories to fell and remove timber on the public domain for mining and domestic purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all citizens of the United States and other persons, bona fide residents of the State of Colorado or Nevada, or either of the Territories of New Mexico, Arizona, Utah, Wyoming, Dakota, Idaho, or Montana, and all other mineral districts of the United States, shall be and are hereby, authorized and permitted to fell and remove for building, agricultural, mining, or other domestic purposes, any timber or other trees growing or being on the public lands, said lands being mineral, and not subject to entry under existing laws of the United States, except for mineral entry, in either of said States, Territories or districts of which such citizens or persons may be at the time bona fide residents, subject

to such rules and regulations as the Secretary of the Interior may prescribe for the protection of the timber and of the undergrowth growing upon such lands, and for other purposes: *Provided*, The provisions of this act shall not extend to railroad corporations.

SEC. 2. That it shall be the duty of the register and the receiver of any local land-office in whose district any mineral land may be situated to ascertain from time to time whether any timber is being cut or used upon any such lands, except for the purposes authorized by this act, within their respective land districts; and, if so, they shall immediately notify the Commissioner of the General Land Office of that fact; and all necessary expenses incurred in making such proper examinations shall be paid and allowed such register and receiver in making up their next quarterly accounts.

SEC. 3. Any person or persons who shall violate the provisions of this act, or any rules and regulations in pursuance thereof made by the Secretary of the Interior, shall be deemed guilty of a misdemeanor, and, upon conviction, shall be fined in any sum not exceeding five hundred dollars, and to which may be added imprisonment for any term not exceeding six months.

Approved June 3, 1878 (20 Stat., 88).

AN ACT to amend sections twenty-three hundred and twenty-four and twenty-three hundred and twenty-five of the Revised Statutes of the United States concerning mineral lands.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section twenty-three hundred and twenty-five of the Revised Statutes of the United States be amended by adding thereto the following words: "*Provided*, That where the claimant for a patent is not a resident of or within the land-district wherein the vein, lode, ledge or deposit sought to be patented is located, the application for patent and the affidavits required to be made in this section by the claimant for such patent may be made by his, her, or its authorized agent, where

said agent is conversant with the facts sought to be established by such affidavits: *And provided*, That this section shall apply to all applications now pending for patents to mineral lands."

SEC. 2. That section twenty-three hundred and twenty-four of the Revised Statutes of the United States be amended by adding the following words: "*Provided*, That the period within which the work required to be done annually on all unpatented mineral claims shall commence on the first day of January succeeding the date of location of such claim, and this section shall apply to all claims located since the tenth day of May, anno Domini eighteen hundred and seventy-two."

Approved January 22, 1880 (21 Stat., 61).

AN ACT to amend section twenty-three hundred and twenty-six of the Revised Statutes relating to suits at law affecting the title to mining claims.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That if, in any action brought pursuant to section twenty-three hundred and twenty-six of the Revised Statutes, title to the ground in controversy shall not be established by either party, the jury shall so find, and judgment shall be entered according to the verdict. In such case costs shall not be allowed to either party, and the claimant shall not proceed in the land office or be entitled to a patent for the ground in controversy until he shall have perfected his title.

Approved March 3, 1881 (21 Stat., 505).

AN ACT to amend section twenty-three hundred and twenty-six of the Revised Statutes in regard to mineral lands and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the adverse claim required by section twenty-three hundred and twenty-six of the Revised

Statutes may be verified by the oath of any duly authorized agent or attorney-in-fact of the adverse claimant cognizant of the facts stated; and the adverse claimant, if residing or at the time being beyond the limits of the district wherein the claim is situated, may make oath to the adverse claim before the clerk of any court of record of the United States or the State or Territory where the adverse claimant may then be, or before any notary public of such State or Territory.

SEC. 2. That applicants for mineral patents, if residing beyond the limits of the district wherein the claim is situated, may make any oath or affidavit required for proof of citizenship before the clerk of any court of record, or before any notary public of any State or Territory.

Approved April 26, 1882 (22 Stat., 49).

An ACT to exclude the public lands in Alabama from the operation of the laws relating to mineral lands.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That within the State of Alabama all public lands, whether mineral or otherwise, shall be subject to disposal only as agricultural lands: *Provided, however,* That all lands which have heretofore been reported to the General Land Office as containing coal and iron shall first be offered at public sale: *And provided further,* That any bona fide entry under the provisions of the homestead law of lands within said State heretofore made may be patented without reference to an act approved May tenth, eighteen hundred and seventy-two, entitled, "An act to promote the development of the mining resources of the United States," in cases where the persons making application for such patents have in all other respects complied with the homestead law relating thereto.

Approved March 3, 1883 (22 Stat., 487).

AN ACT providing a civil government for Alaska.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, * * * * *

SEC. 8. That the said district of Alaska is hereby created a land district, and a United States land office for said district is hereby located at Sitka. The commissioner provided for by this act to reside at Sitka shall be ex officio register of said land office, and the clerk provided for by this act shall be ex officio receiver of public moneys, and the marshal provided for by this act shall be ex officio surveyor-general of said district and the laws of the United States relating to mining claims, and the rights incident thereto, shall, from and after the passage of this act, be in full force and effect in said district, under the administration thereof herein provided for, subject to such regulations as may be made by the Secretary of the Interior, approved by the President: *Provided*, That the Indians or other persons in said district shall not be disturbed in the possession of any lands actually in their use or occupation or now claimed by them, but the terms under which such persons may acquire title to such lands is reserved for future legislation by Congress: *And provided further*, That parties who have located mines or mineral privileges therein under the laws of the United States applicable to the public domain, or who have occupied and improved or exercised acts of ownership over such claims, shall not be disturbed therein, but shall be allowed to perfect their title to such claims by payment as aforesaid: *And provided also*, That the land not exceeding six hundred and forty acres at any station now occupied as missionary stations among the Indian tribes in said section, with the improvements thereon erected by or for such societies, shall be continued in the occupancy of the several religious societies to which said missionary stations respectively belong until action by Congress. But nothing contained in this act shall be construed to put in force

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in said district the general land laws of the United States.

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Approved May 17, 1884 (23 Stat., 24).

AN ACT making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and ninety-one, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, * * * * *

No person who shall, after the passage of this act, enter upon any of the public lands with a view to occupation, entry, or settlement under any of the land laws shall be permitted to acquire title to more than three hundred and twenty acres in the aggregate, under all of said laws, but this limitation shall not operate to curtail the right of any person who has heretofore made entry or settlement on the public lands, or whose occupation, entry, or settlement is validated by this act: *Provided*, That in all patents for lands hereafter taken up under any of the land laws of the United States or on entries or claims validated by this act, west of the one hundredth meridian it shall be expressed that there is reserved from the lands in said patent described a right of way thereon for ditches or canals constructed by the authority of the United States. * * * * *

Approved August 30, 1890 (26 Stat., 371).

AN ACT to repeal timber-culture laws, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, * * * * *

SEC. 16. That townsit entries may be made by incorporated towns and cities on the mineral lands of the United States, but no title shall be acquired by such towns or cities to any vein of gold, silver, cinnabar, copper or lead, or to any valid mining claim or possession

held under existing law. When mineral veins are possessed within the limits of an incorporated town or city, and such possession is recognized by local authority or by the laws of the United States, the title to town lots shall be subject to such recognized possession and the necessary use thereof and when entry has been made or patent issued for such townsites to such incorporated town or city, the possessor of such mineral vein may enter and receive patent for such mineral vein locations, and of all surface ground appertaining thereto: *Provided*, That no entry shall be made by such mineral-vein claimant for surface ground where the owner or occupier of the surface ground shall have had possession of the same before the inception of the title of the mineral-vein applicant.

SEC. 17. That reservoir sites located or selected and to be located and selected under the provisions of "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine, and for other purposes," and amendments thereto, shall be restricted to and shall contain only so much land as is actually necessary for the construction and maintenance of reservoirs, excluding so far as practicable lands occupied by actual settlers at the date of the location of said reservoirs, and that the provisions of "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and ninety-one, and for other purposes," which reads as follows, viz: "No person who shall after the passage of this act enter upon any of the public lands with a view to occupation, entry or settlement under any of the land laws shall be permitted to acquire title to more than three hundred and twenty acres in the aggregate under all said laws," shall be construed to include in the maximum amount of lands the title to which is permitted to be acquired by one person only agricultural lands and not include lands entered or sought to be entered under mineral land laws.

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Approved March 3, 1891 (26 Stat., 1095).



SKAGWAY WHARVES UNDER CONSTRUCTION.



WHITE PASS-SKAGWAY TRAIL (September, 1897).

MINERAL LANDS OPEN TO EXPLORATION, OCCUPATION,
AND PURCHASE.

1. It will be perceived that by the foregoing provisions of law the mineral lands in the public domain, surveyed or unsurveyed, are open to exploration, occupation and purchase by all citizens of the United States and all those who have declared their intentions to become such.

STATUS OF LODE-CLAIMS LOCATED PRIOR TO MAY 10,
1872.

2. By an examination of the several sections of the Revised Statutes it will be seen that the *status* of lode-claims located *previous* to the 10th of May, 1872, is not changed with regard to their *extent along the lode or width of surface*.

3. Mining rights acquired under such previous locations are, however, enlarged by such Revised Statutes in the following respect, viz: The locators of all such previously taken veins or lodes, their heirs and assigns, so long as they comply with the laws of Congress and with State, Territorial or local regulations not in conflict therewith, governing mining claims, are invested with the exclusive possessory right of all the surface included within the lines of their veins, lodes or ledges throughout their entire depth, the top or apex of which lies inside of such surface lines extended downward vertically, although such veins, lodes or ledges may so far depart from a perpendicular in their course downward as to extend outside the vertical side-lines of such locations at the surface, it being expressly provided, however, that the right of possession to such outside parts of said veins or ledges shall be confined to such portions thereof as lie between vertical planes drawn downward, as aforesaid, through the end lines of their locations so continued in their own direction that such planes will intersect such exterior parts of such veins, lodes or ledges; no right being granted, however, to the

claimant of such outside portion of a vein or ledge to enter upon the surface location of another claimant.

4. It is to be distinctly understood, however, that the law limits the possessory right to veins, lodes or ledges, *other* than the one named in the original location, to such as were not *adversely claimed on May 10, 1872*, and that where such other vein or ledge was so adversely claimed at that date, the right of the party so adversely claiming is in no way impaired by the provisions of the Revised Statutes.

5. In order to hold the possessory title to a mining claim located prior to May 10, 1872, and for which a patent has not been issued, the law requires that *ten dollars* shall be expended annually in labor or improvements on each claim of *one hundred feet* on the course of the vein or lode until a patent shall have been issued therefor; but where a number of such claims are held in common upon the same vein or lode, the aggregate expenditure that would be necessary to hold all the claims, at the rate of ten dollars per hundred feet, may be made upon any one claim; a failure to comply with this requirement in any one year subjecting the claim upon which such failure occurred to relocation by other parties, the same as if no previous location thereof had ever been made, unless the claimants under the original location shall have resumed work thereon after such failure and before such re-location. The first annual expenditure upon claims of this class should have been performed subsequent to May 10, 1872, and prior to January 1, 1875. From and after January 1, 1875, the required amount must be expended *annually* until patent issues. By decision of the honorable Secretary of the Interior, dated March 4, 1879, such annual expenditures are not required subsequent to entry, the date of issuing the patent certificate being the date contemplated by statute.

6. Upon the failure of any one of several co-owners of a vein, lode or ledge, which has not been entered, to contribute his proportion of the expenditures necessary to hold the claim or claims so held in ownership in common, the co-owners, who have performed the labor or

made the improvements as required by said Revised Statutes, may, at the expiration of the year, give such delinquent co-owner personal notice in writing, or notice by publication in the newspaper published nearest the claim for at least once a week for ninety days; and if upon the expiration of ninety days after such notice in writing, or upon the expiration of one hundred and eighty days after the first newspaper publication of notice, the delinquent co-owner shall have failed to contribute his proportion to meet such expenditures or improvements, his interest in the claim by law passes to his co-owners who have made the expenditures or improvements as aforesaid. Where a claimant alleges ownership of a forfeited interest under the foregoing provision, the sworn statement of the publisher as to the facts of publication, giving dates and a printed copy of the notice published, should be furnished, and the claimant must swear that the delinquent co-owner failed to contribute his proper proportion within the period fixed by the statute.

PATENTS FOR VEINS OR LODES HERETOFORE ISSUED.

7. Rights under patents for veins or lodes heretofore granted under previous legislation of Congress are enlarged by the Revised Statutes so as to invest the patentee, his heirs or assigns, with title to all veins, lodes or ledges throughout their entire depth the top or apex of which lies within the end and side boundary lines of his claim on lies the surface, as patented, extended downward vertically, although such veins, lodes or ledges may so far depart from a perpendicular in their course downward as to extend outside the verticle side-lines of the claim at the surface. The right of possession to such outside parts of such veins or ledges to be confined to such portions thereof as lie between verticle planes drawn downward through the end lines of the claims at the surface, so continued in their own direction that such planes will intersect such exterior parts of such veins or ledges; it being expressly provided, however, that all veins, lodes

or ledges, the top or apex of which lies inside such surface locations, *other* than the one named in the patent, which were *adversely claimed on the 10th of May, 1872*, are excluded from such conveyance by patent.

8. Applications for patents for mining-claims pending at the date of the act of May 10, 1872, may be prosecuted to final decision in the general Land Office, and where no adverse rights are affected thereby patents will be issued in pursuance of the provisions of the Revised Statutes.

MANNER OF LOCATING CLAIMS ON VEINS OR LODES

AFTER MAY 10, 1872.

9. From and after the 10th May, 1872, any person who is a citizen of the United States, or who has declared his intention to become a citizen, may locate, record and hold a mining claim of *fifteen hundred linear feet* along the course of any mineral vein or lode subject to location; or an association of persons, severally qualified as above, may make joint location of such claim of *fifteen hundred feet*, but in no event can a location of a vein or lode made subsequent to May 10, 1872, exceed fifteen hundred feet along the course thereof, whatever may be the number of persons composing the association.

10. With regard to the extent of surface-ground adjoining a vein or lode and claimed for the convenient working thereof, the Revised Statutes provide that the lateral extent of locations of veins or lodes made after May 10, 1872, shall in no case *exceed three hundred feet on each side of the middle of the vein at the surface*, and that no such surface rights shall be limited by any mining regulations to less than twenty-five feet on each side of the middle of the vein at the surface, except where adverse rights existing on the 10th May, 1872, may render such limitation necessary; the end-lines of such claims to be in all cases parallel to each other. Said lateral measurements cannot extend beyond three hundred feet on *either* side of the middle of the vein at the surface, or such distance

as is allowed by local laws. For example: 400 feet cannot be taken on one side and 200 feet on the other. If, however, 300 feet on each side are allowed, and by reason of prior claims but 100 feet can be taken on one side, the locator will not be restricted to less than 300 feet on the other side; and when the locator does not determine by exploration *where* the middle of the vein at the surface is his discovery shaft must be assumed to mark such point.

11. By the foregoing it will be perceived that no lode-claim located after the 10th May, 1872, can exceed a parallelogram fifteen hundred feet in length by six hundred feet in width, but whether surface-ground of that width can be taken depends upon the local regulations or State or Territorial laws in force in the several mining districts; and that no such local regulations or State or Territorial laws shall limit a vein or lode claim to less than fifteen hundred feet along the course thereof, whether the location is made by one or more persons, nor can surface rights be limited to less than fifty feet in width, unless adverse claims existing on the 10th day of May, 1872, render such lateral limitation necessary.

12. It is provided by the Revised Statutes that the miners of each district may make rules and regulations not in conflict with the laws of the United States, or of the state or territory in which such districts are respectively situated, governing the location, manner of recording and amount of work necessary to hold possession of a claim. They likewise require that the location shall be so distinctly marked on the ground that its boundaries may be readily traced. This is a very important matter and locators cannot exercise too much care in defining their locations at the outset, inasmuch as the law requires that all records of mining locations made subsequent to May 10, 1872, shall contain the name or names of the locators, the date of the location and such a *description of the claim or claims* located by reference to some natural object or permanent monument, as will identify the claim.

13. The statutes provide that no lode-claim shall be recorded until after the discovery of a vein or lode within the limits of the claim located, the object of which provision is evidently to prevent the appropriation of presumed mineral ground for speculative purposes to the exclusion of *bona fide* prospectors, before sufficient work has been done to determine whether a vein or lode really exists.

14. The claimant should, therefore, prior to locating his claim, unless the vein can be traced upon the surface, sink a shaft or run a tunnel or drift to a sufficient depth therein to discover and develop a mineral-bearing vein, lode or crevice; should determine, if possible, the general course of such vein in either direction from the point of discovery, by which direction he will be governed in marking the boundaries of his claim on the surface. His location notice should give the course and distance as nearly as practicable from the discovery-shaft on the claim to some permanent, well-known points or objects, such, for instance, as stone monuments, blazed trees, the confluence of streams, point of intersection of well-known gulches, ravines or roads, prominent buttes, hills, etc., which may be in the immediate vicinity and which will serve to perpetuate and fix the *locus* of the claim and render it susceptible of identification from the description thereof given in the record of locations in the district and should be duly recorded.

15. In addition to the foregoing data the claimant should state the names of adjoining claims, or, if none adjoin, the relative positions of the nearest claims; should drive a post or erect a monument of stones at each corner of his surface-ground, and at the point of discovery or discovery shaft should fix a post, stake or board, upon which should be designated the name of the lode, the name or names of the locators, the number of feet claimed and in which direction from the point of discovery; it being essential that the location notice filed for record, in addition to the foregoing description should state whether the entire claim

of fifteen hundred feet is taken on one side of the point of discovery or whether it is partly upon one and partly upon the other side thereof, and in the latter case, how many feet are claimed upon each side of such discovery-point.

16. Within a reasonable time, say twenty days, after the location shall have been marked on the ground, or such time as is allowed by the local laws, notice thereof, accurately describing the claim in manner aforesaid, should be filed for record with the proper recorder of the district, who will thereupon issue the usual certificate of location.

17. In order to hold the possessory right to a location made since May 10, 1872, not less than one hundred dollars' worth of labor must be performed, or improvements made thereon annually until entry shall have been made. Under the provisions of the act of Congress approved January 22, 1880, the first annual expenditure becomes due and must be performed during the calendar year succeeding that in which the location was made. Expenditure made or labor performed prior to the first day of January succeeding the date of location will not be considered as a part of or applied upon the first annual expenditure required by law. Failure to make the expenditure or perform the labor required will subject the claim to relocation by any other party having the necessary qualifications, unless the original locator, his heirs, assigns or legal representatives have resumed work thereon after such failure and before such relocation.

18. The expenditures required upon mining-claims may be made from the surface or in running a tunnel for the development of such claims, the act of February 11, 1875, providing that where a person or company has, or may run a tunnel for the purpose of developing a lode or lodes owned by said person or company, the money so expended in said tunnel shall be taken and considered as expended on said lode or lodes, and such person or company shall not be required to perform work on the surface of said lode or lodes in order to hole the same.

19. The importance of attending to these details in the matter of location, labor and expenditure will be the more readily perceived when it is understood that a failure to give the subject proper attention may invalidate the claim.

TUNNEL RIGHTS.

20. Section 2323 provides that where a tunnel is run for the development of a vein or lode, or for the discovery of mines the owners of such tunnels shall have the right of possession of all veins or lodes within three thousand feet from the face of such tunnel on the line thereof, not previously known to exist, discovered in such tunnel, to the same extent as if discovered from the surface; and locations on the line of such tunnel or veins or lodes not appearing on the surface, made by other parties after the commencement of the tunnel, and while the same is being prosecuted with reasonable diligence, shall be invalid; but failure to prosecute the work on the tunnel for six months shall be considered as an abandonment of the right to all undiscovered veins or lodes on the line of said tunnel.

The effect of this is simply to give the proprietors of a mining tunnel run in good faith the possessory right to fifteen hundred feet of any blind lodes cut, discovered or intersected by such tunnel, which were not previously known to exist, within three thousand feet from the face or point of commencement of such tunnel, and to prohibit other parties, after the commencement of the tunnel, from prospecting for and making locations of lodes on the *line thereof* and within said distance of three thousand feet, unless such lodes appear upon the surface or were previously known to exist.

22. The term "face," as used in said section, is construed and held to mean the first working-face formed in the tunnel, and to signify the point at which the tunnel actually enters cover; it being from this point that the three thousand feet are to be counted, upon which prospecting is prohibited as aforesaid.

23. To avail themselves of the benefits of this pro-

vision of law the proprietors of a mining tunnel will be required at the time they enter cover, as aforesaid, to give proper notice of their tunnel location by erecting a substantial post, board or monument at the face or point of commencement thereof, upon which should be posted a good and sufficient notice, giving the names of the parties or company claiming the tunnel-right; the actual or proposed course or direction of the tunnel; the height and width thereof and the course and distance from such face or point of commencement to some permanent well-known objects in the vicinity by which to fix and determine the *locus* in manner heretofore set forth applicable to locations of veins or lodes, and at the time of posting such notice they shall, in order that miners or prospectors may be enabled to determine whether or not they are within the lines of the tunnel, establish the boundary lines thereof, by stakes or monuments placed along such lines at proper intervals, to the terminus of the three thousand feet from the face or point of commencement of the tunnel, and the lines so marked will define and govern as to the specific boundaries within which prospecting for lodes not previously known to exist is prohibited while work on the tunnel is being prosecuted with reasonable diligence.

24. At the time of posting notice and marking out the lines of the tunnel, as aforesaid, a full and correct copy of such notice of location defining the tunnel claim must be filed for record with the mining recorder of the district, to which notice must be attached the sworn statement or declaration of the owners, claimants or projectors of such tunnel, setting forth the facts in the case; stating the amount expended by themselves and their predecessors in interest in prosecuting work thereon; the extent of the work performed, and that it is *bona fide* their intention to prosecute work on the tunnel so located and described with reasonable diligence for the development of a vein or lode, or for the discovery of mines, or both, as the case may be. This notice of location must be duly recorded, and, with the said sworn state-

ment attached, kept on the recorder's files for future reference.

25. By a compliance with the foregoing much needless difficulty will be avoided, and the way for the adjustment of legal rights acquired in virtue of said section 2323 will be made much more easy and certain.

26. This office will take particular care that no improper advantage is taken of this provision of law by parties making or professing to make tunnel locations, ostensibly for the purpose named in the statute, but really for the purpose of monopolizing the lands lying in front of their tunnels to the detriment of the mining interests and to the exclusion of *bona fide* prospectors or miners, but will hold such tunnel claimants to a strict compliance with the terms of the statutes; and a *reasonable diligence* on their part in prosecuting the work is one of their essential conditions of their implied contract. Negligence or want of due diligence will be construed as working a forfeiture of their right to all undiscovered veins on the line of such tunnel.

MANNER OF PROCEEDING TO OBTAIN GOVERNMENT TITLE TO VEIN OR LOSE CLAIMS.

27. By section 2325 authority is given for granting titles for mines by patent from the Government to any person, association, or corporation having the necessary qualifications as to citizenship and holding the right of possession to a claim in compliance with law.

28. The claimant is required in the first place to have a correct survey of his claim made under authority of the surveyor-general of the State or Territory in which the claim lies; such survey to show with accuracy the exterior surface boundaries of the claim, which boundaries are required to be distinctly marked by monuments on the ground. Four plats and one copy of the original field notes, in each case, will be prepared by the surveyor-general; one plat and the original field notes to be retained in the office of the surveyor-general, one copy of the plat to be given the claimant for posting upon the

claim, one plat and a copy of the field notes to be given the claimant for filing with the proper register, to be finally transmitted by that officer, with other papers in the case, to this office, and one plat to be sent by the surveyor-general to the register of the proper land district to be retained on his files for future reference. As there is no resident surveyor-general for the State of Arkansas, applications for the survey of mineral claims in said State should be made to the Commissioner of this office, who, under the law, is *ex officio* the U. S. surveyor-general.

29. The claimant is then required to post a copy of the plat of such survey in a conspicuous place upon the claim, together with notice of his intention to apply for a patent therefor, which notice will give the date of posting, the name of the claimant, the name of the claim, mine, or lode; the mining district and county; whether the location is of record, and, if so, where the record may be found; the number of feet claimed along the vein and the presumed direction thereof; the number of feet claimed on the lode in each direction from the point of discovery, or other well-defined place on the claim; the name or names of adjoining claimants on the same or other lodes; or, if none adjoin, the names of the nearest claims, etc.

30. After posting the said plat and notice upon the premises, the claimant will file with the proper register and receiver a copy of such plat and the field notes of survey of the claim, accompanied by the affidavit of at least two credible witnesses, that such plat and notice are posted conspicuously upon the claim, giving the date and place of such posting; a copy of the *notice* so posted to be attached to, and form a part of said affidavit.

31. Accompanying the field notes so filed must be the sworn statement of the claimant that he has the possessory right to the premises therein described, in virtue of a compliance by himself (and by his grantors, if he claims by purchase) with the mining rules, regulations and customs of the mining district, State or Territory in which the claim lies, and with the mining laws of Congress; such

sworn statement to narrate briefly, but as clearly as possible, the facts constituting such compliance, the origin of his possession and the basis of his claim to a patent.

32. This affidavit should be supported by appropriate evidence from the mining recorder's office as to his possessory right, as follows, viz: Where he claims to be the locator, or a locator in company with others who have since conveyed their interest in the location to him, a full, true and correct copy of such location should be furnished, as the same appears upon the mining records; such copy to be attested by the seal of the recorder, or if he has no seal, then he should make oath to the same being correct, as shown by his records. Where the applicant claims only as a purchaser for valuable consideration, a copy of the location record must be filed under seal or upon oath as aforesaid, with an abstract of title from the proper recorder, under seal or oath as aforesaid, brought down as near as practicable to date of filing the application, tracing the right of possession by a continuous chain of conveyances from the original locators to the applicant, also certifying that no conveyances affecting the title to the claim in question appear of record in his office other than those set forth in the accompanying abstract.

33. In the event of the mining records in any case having been destroyed by fire or otherwise lost, affidavit of the fact should be made, and secondary evidence of possessory title will be received, which may consist of the affidavit of the claimant, supported by those of any other parties cognizant of the facts relative to his location, occupancy, possession, improvements, etc.; and in such case of lost records, any deeds, certificates of location or purchase, or other evidence which may be in the claimant's possession and tend to establish his claim, should be filed.

34. Upon the receipt of these papers the register will, at the expense of the claimant (who must furnish the agreement of the publisher to hold applicant for patent alone responsible for charges of publication), publish a notice of such application for the period of sixty days in

a newspaper published nearest to the claim, and will post a copy of such notice in his office for the same period. When the notice is published in a *weekly* newspaper ten consecutive insertions are necessary; when in a *daily* newspaper the notice must appear in each issue for sixty-one consecutive issues, the first day of issue being excluded in estimating the period of sixty days.

35. The notices so published and posted must be as full and complete as possible, and embrace all the *data* given in the notice posted upon the claim.

36. Too much care can not be exercised in the preparation of these notices, inasmuch as upon their accuracy and completeness will depend, in a great measure, the regularity and validity of the whole proceeding.

37. In the publication of final-proof notices the register has *no discretion* under the law to designate any other than the newspaper "nearest the land" for such purpose when such paper is a newspaper of general circulation. But he will in all cases designate the newspaper of general circulation that is published nearest the land, geographically measured. When two or more papers are published in the same town, nearest the land, he may select the one which, in his honest and impartial judgment as a public officer, will best subserve the purpose of the law and the general interests of the public.

38. Newspaper charges must not exceed the rates established by this office for the publication of legal notices.

39. The claimant, either at the time of filing these papers with the register or at any time during the sixty days' publication, is required to file a certificate of the surveyor-general that not less than five hundred dollars' worth of labor has been expended or improvements made upon the claim by the applicant or his grantors; that the plat filed by the claimant is correct; that the field notes of the survey, as filed, furnish such an accurate description of the claim as will, if incorporated into a patent, serve to fully identify the premises, and that such reference is made therein to natural objects or

permanent monuments as will perpetuate and fix the *locus* thereof.

40. It will be the more convenient way to have this certificate indorsed by the surveyor-general, both upon the plat and field notes of survey filed by the claimant as aforesaid.

41. After the sixty days' period of newspaper publication has expired the claimant will furnish from the office of publication a sworn statement that the notice was published for the statutory period, giving the first and last day of such publication, and his own affidavit showing that the plat and notice aforesaid remained conspicuously posted upon the claim sought to be patented during said sixty days' publication, giving the dates.

42. Upon the filing of this affidavit the register will, if no adverse claim was filed in his office during the period of publication, permit the claimant to pay for the land according to the area given in the plat and field notes of survey aforesaid, at the rate of five dollars for each acre and five dollars for each fractional part of an acre, the receiver issuing the usual duplicate receipt therefor. The claimant will also make a sworn statement of all charges and fees paid by him for publication and surveys, together with all fees and money paid the register and receiver of the land office; after which the whole matter will be forwarded to the Commissioner of the General Land Office and a patent issued thereon if found regular.

43. In sending up the papers in the case the register must not omit certifying to the fact that the notice was posted in his office for the full period of sixty days, such certificate to state distinctly when such posting was done and how long continued.

44. The consecutive series of numbers of mineral entries must be continued, whether the same are of lode or placer claims or mill-sites.

45. The surveyors-general should designate all surveyed mineral claims by a progressive series of numbers, beginning with survey No. 37, irrespective as to whether they are situated on surveyed or unsurveyed lands, the

claim to be so designated at date of issuing the order therefor, in addition to the local designation of the claim; it being required in all cases that the plat and field notes of the survey of a claim must, in addition to the reference to permanent objects in the neighborhood, describe the *locus* of the claim, with reference to the lines of public surveys, by a line connecting a corner of the claim with the nearest public corner of the United States surveys, unless such claim be on unsurveyed lands at a distance of more than two miles from such public corner, in which latter case it should be connected with a United States mineral monument. Such connecting line must not be more than *two miles* in length and should be measured on the ground direct between the points, or calculated from actually surveyed traverse lines if the nature of the country should not permit direct measurement. If a regularly established survey corner is within two miles of a claim situated on unsurveyed lands, the connection should be made with such corner in preference to a connection with a United States mineral monument. The connecting line must be surveyed by the deputy mineral surveyor at the time of his making the particular survey, and be made a part thereof.

46. Upon the approval of the survey of a mining claim made upon surveyed lands, the surveyor-general will prepare and transmit to the local land office and to this office a diagram tracing showing the portions of legal 40-acre sub-divisions made fractional by reason of the mineral survey, designating each of such portions by the proper lot number, beginning with No. 1 in each section and giving the area of each lot.

47. The survey and plat of mineral claims, required by section 2325, Revised Statutes of the United States, to be filed in the proper land office, with application for patent, must be made subsequent to the recording of the location of the mine; and when the original location is made by survey of a United States deputy surveyor such location survey can not be substituted for that required by the statute, as above indicated.

48. The surveyor-general should derive his informa-

tion upon which to base his certificate as to the value of labor expended or improvements made from his deputy who makes the actual survey and examination upon the premises, and such deputy should specify with particularity and full detail the character and extent of such improvements.

49. The following particulars should be observed in the survey of every mining claim:

(1) The exterior boundaries of the claim should be represented on the plat of survey and in the field notes.

(2) The intersection of the lines of the survey with the lines of conflicting prior surveys should be noted in the field-notes and represented upon the plat.

(3) Conflicts with unsurveyed claims, where the applicant for survey does not claim the area in conflict, should be shown by actual survey.

(4) The total area of the claim embraced by the exterior boundaries should be stated, and also the area in conflict with each intersecting survey, substantially as follows:

	<i>Acres.</i>
Total area of claim.....	1050
Area in conflict with survey No. 302.....	1.56
Area in conflict with survey No. 948.....	2.33
Area in conflict with Mountain Maid lode mining claim, unsurveyed.....	1.48

It does not follow that because mining surveys are required to exhibit all conflicts with prior surveys the areas of conflict are to be excluded. The field-notes and plat are made a part of the application for patent, and care should be taken that the description does not inadvertently exclude portions intended to be retained. It is better that the application for patent should state the portions to be excluded in express terms. A survey executed, as in the example given, will enable the applicant for patent to exclude such conflicts as may seem desirable. For instance, the conflict with survey No. 302 and with the Mountain Maid lode claim might be excluded and that with survey No. 948 included.

50. The rights granted to locators under section

CHILKAT VALLEY—MOUTH OF CHILKAT RIVER (in May).





WHITE PASS-SKAGWAY TRAIL (September, 1897).

2322, Revised Statutes, are restricted to such locations on veins, lodes or ledges as may be "situated on the *public domain*." In applications for lode claims where the survey conflicts with a prior valid lode claim or entry and the ground in conflict is excluded, the applicant not only has no right to the excluded ground, but he has no right to that portion of any vein or lode the top or apex of which lies within such excluded ground, unless his location was prior to May 10, 1872. His right to the lode claimed terminates where the lode, in its onward course or strike, intersects the exterior boundary of such excluded ground and passes within it.

51. The end line of his survey should not, therefore, be established beyond such intersection, unless it should be necessary so to do for the purpose of including ground held and claimed under a location which was made upon public land and valid at the time it was made. To include such ground (which may possibly embrace other lodes) the end line of the survey may be established within the conflicting survey, but the line must be so run as not to extend any farther into the conflicting survey than may be necessary to make such end line parallel to the other end line and at the same time embrace the ground so held and claimed. The useless practice in such cases of extending *both* the side lines of a survey into the conflicting survey and establishing an end line wholly within it, beyond a point necessary under the rule just stated, will be discontinued.

PLACER CLAIMS.

52. The proceedings to obtain patents for claims usually called placers, including all forms of deposit, excepting veins of quartz or other rock in place, are similar to the proceedings prescribed for obtaining patents for vein or lode claims; but where said placer claim shall be upon surveyed lands, and conforms to legal subdivisions, no further survey or plat will be required, and all placer mining claims located after May 10, 1872, shall conform as nearly as practicable with the United States system of public-land surveys and the rectangular subdivi-

visions of such surveys, and no such location shall include more than twenty acres for each individual claimant; but where placer claims can not be conformed to legal sub-divisions, survey and plat shall be made as on unsurveyed lands. But where such claims are located previous to the public surveys, and do not conform to legal sub-divisions, survey, plat and entry thereof may be made according to the boundaries thereof, provided the location is in all respects legal.

53. The proceedings for obtaining patents for veins or lodes having already been fully given, it will not be necessary to repeat them here, it being thought that careful attention thereto by applicants and the local officers will enable them to act understandingly in the matter and make such slight modifications in the notice, or otherwise, as may be necessary in view of the different nature of the two classes of claims, placer claims being fixed, however, at two dollars and fifty cents per acre, or fractional part of an acre.

54. By section 2330, authority is given for the subdivision of forty-acre legal sub-divisions into *ten-acre* lots, which is intended for the greater convenience of miners in segregating their claims both from one another and from intervening agricultural lands.

55. It is held, therefore, that under a proper construction of the law these ten-acre lots in mining districts should be considered and dealt with, to all intents and purposes, as legal sub-divisions, and that an applicant having a legal claim which conforms to one or more of these ten-acre lots, either adjoining or cornering, may make entry thereof, after the usual proceedings, without further survey or plat.

56. In cases of this kind, however, the notice given of the application must be very specific and accurate in description, and as the forty-acre tracts may be subdivided into ten-acre lots, either in the form of squares of ten by ten chains, or if parallelograms five by twenty chains, so long as the lines are parallel and at right angles with the lines of the public surveys, it will be necessary that the notice and application state speci-

cally what ten-acre lots are sought to be patented, in addition to the other *data* required in the notice.

57. Where the ten-acre sub-division is in the form of a square it may be described, for instance, as the "SE. $\frac{1}{4}$ of the SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$," or, if in the form of a parallelogram, as aforesaid, it may be described as the "W. $\frac{1}{2}$ of the W. $\frac{1}{2}$ of the SW. $\frac{1}{4}$ of the NW. $\frac{1}{4}$ (or the N. $\frac{1}{2}$ of the S. $\frac{1}{2}$ of the NE. $\frac{1}{4}$ of the SE. $\frac{1}{4}$) of section——, township——, range——," as the case may be; but, in addition to this description of the land, the notice must give all the other *data* that is required in a mineral application, by which parties may be put on inquiry as to the premises sought to be patented. The proofs submitted with applications for claims of this kind must show clearly the character and the extent of the improvement upon the premises.

Inasmuch as the surveyor-general has no duty to perform in connection with the entry of a placer claim of legal sub-divisions, the proof of improvements must show their value to be not less than *five hundred dollars* and that they were made by the applicant for patent or his grantors. The annual expenditure to the amount of \$100, required by section 2324, Revised Statutes, must be made upon placer claims as well as lode claims.

58. Applicants for patent to a placer claim, who are also in possession of a known vein or lode included therein, must state in their application that the placer includes such vein or lode. The published and posted notices must also include such statement. If veins or lodes lying within a placer location are owned by other parties, the fact should be distinctly stated in the application for patent and in all the notices. But in all cases whether the lode is claimed or excluded, it must be surveyed and marked upon the plat; the field notes and plat giving the area of the lode claim or claims and the area of the placer separately. It should be remembered that an application which omits to include an application for a known vein or lode therein, must be construed as a conclusive declaration that the applicant has no right of possession to the vein or lode. Where there is no

known lode or vein, the fact must appear by the affidavit of two or more witnesses.

59. By section 2330 it is declared that no location of a placer claim made after July 9, 1870, shall exceed one hundred and sixty acres for any one person or association of persons, which location shall conform to the United States surveys.

60. Section 2331 provides that all placer-mining claims located after May 10, 1872, shall conform as nearly as practicable with the United States systems of public surveys and the sub-divisions of such surveys, and no such locations shall include more than twenty acres for each individual claimant.

61. The foregoing provisions of law are construed to mean that after the 9th day of July, 1870, no location of a placer claim can be made to exceed one hundred and sixty acres, whatever may be the number of locators, associated together, or whatever the local regulations of the district may allow; and that from and after May 10, 1872, no location made by an individual can exceed twenty acres, and no location made by an association of individuals can exceed one hundred and sixty acres, which location of one hundred and sixty acres can not be made by a less number than eight *bona fide* locators; and no local laws or mining regulations can restrict a placer location to less than twenty acres, although the locator is not compelled to take so much.

62. The regulations hereinbefore given as to the manner of marking locations on the ground and placing the same on record must be observed in the case of placer locations so far as the same are applicable, the law requiring, however, that where placer claims are upon *surveyed* public lands the locations must hereafter be made to conform to legal sub-divisions thereof as near as practicable.

63. The first care in recognizing an application for patent upon a placer claim must be exercised in determining the exact classification of the lands. To this end the clearest evidence of which the case is capable should be presented.

(1) If the claim be all placer ground, that fact must be stated in the application and corroborated by accompanying proofs; if of mixed placers and lodes it should be so set out, with a description of all known lodes situated within the boundaries of the claim. A specific declaration, such as is required by section 2333, Revised Statutes, must be furnished as to each lode intended to be claimed. All other known lodes are, by the silence of the applicant, excluded by law from all claim by him of whatsoever nature, possessory or otherwise.

(2) Section 2395, Revised Statutes (sub-division 7), requires the surveyor to "note in his field books the true situation of all mines, salt licks, salt springs and mill seats which comes to his knowledge;" also "all water-courses over which the lines he runs may pass." It further requires him to "note the quality of the lands." These descriptive notes are required by sub-division 8 to be incorporated in the plat by the surveyor-general.

(3) If these duties have been performed, the public surveys will furnish a reasonable guide to the district officers and to claimants in prosecuting their applications. But experience has shown that great neglect has resulted from inattention to the law in this respect, and the regular plats are of very little value in the matter. It will, therefore, be required in the future that deputy surveyors shail, at the expense of the parties, make full examination of all placer claims surveyed by them and duly note the facts as specified in the law, stating the quality and composition of the soil, the kind and amount of timber and other vegetation, the locus and size of streams and such other matters as may appear upon the surface of the claim. This examination should include the character and extent of all surface and underground workings, whether placer or lode, for mining purposes.

(4) In addition to these data, which the law requires to be shown in all cases, the deputy should report with reference to the proximity of centers of trade or residence; also of well-known systems of lode deposit or of

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individual lodes. He should also report as to the use or adaptability of the claim for placer mining; whether water has been brought upon it in sufficient quantity to mine the same, or whether it can be procured for that purpose; and, finally, what works or expenditures have been made by the claimant or his grantors for the development of the claim, and their situation and location with respect to the same as applied for.

(5) This examination should be reported by the deputy under oath to the surveyor-general, and duly corroborated; and a copy of the same should be furnished with the application for patent to the claim, constituting a part thereof, and included in the oath of the applicant.

(6) Applications awaiting entry, whether published or not, must be made to conform to these regulations, with respect to examination as to the character of the land. Entries already made will be suspended for such additional proofs as may be deemed necessary in each case.

MILL-SITES.

64. Section 2337 provides that "where non-mineral land not contiguous to the vein or lode is used or occupied by the proprietor of such vein or lode for mining or milling purposes such non-adjacent surface ground may be embraced and included in an application for a patent for such vein or lode, and the same may be patented therewith, subject to the same preliminary requirements as to survey and notice as are applicable to veins or lodes; but no location hereafter made of such non-adjacent land shall exceed five acres, and payment for the same must be made at the same rate as fixed by this chapter for the superficies of the lode. The owner of a quartz-mill or reduction works, not owning a mine in connection therewith, may also receive a patent for his mill-site, as provided in this section."

65. To avail themselves of this provision of law parties holding the possessory right to a vein or lode, and to a piece of non-mineral land not contiguous thereto, for

mining or milling purposes, not exceeding the quantity allowed for such purpose by section 2337, United States Revised Statutes, or prior laws, under which the land was appropriated, the proprietors of such vein or lode may file in the proper land-office their application for a patent, under oath, in manner already set forth herein, which application, together with the plat and field-notes, may include, embrace and describe, in addition to the vein or lode, such non-contiguous mill-site, and after due proceedings as to notice, etc., a patent will be issued conveying the same as one claim.

66. In making the survey in a case of this kind the lode claim should be described in the plat and field-notes as "Sur. No. 37, A," and the mill-site as "Sur. No. 37,

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B," or whatever may be its appropriate numerical designation; the course and distance from a corner of the mill-site to a corner of the lode claim to be invariably given in such plat and field-notes, and a copy of the plat and notice of application for patent must be conspicuously posted upon the mill-site as well as upon the vein or lode for the statutory period of sixty days. In making the entry no separate receipt or certificate need be issued for the mill-site, but the whole area of both lode and mill-site will be embraced in one entry, the price being five dollars for each acre and fractional part of an acre embraced by such lode and mill-site claim.

67. In case the owner of a quartz mill or reduction-works is not the owner or claimant of a vein or lode, the law permits him to make application therefor in the same manner prescribed herein for mining claims, and after due notice and proceedings, in the absence of a valid adverse filing, to enter and receive a patent for his mill-site at said price per acre.

68. In every case there must be satisfactory proof that the land claimed as a mill-site is not mineral in character, which proof may, where the matter is unquestioned, consist of the sworn statement of two or more persons capable from acquaintance with the land to testify understandingly.

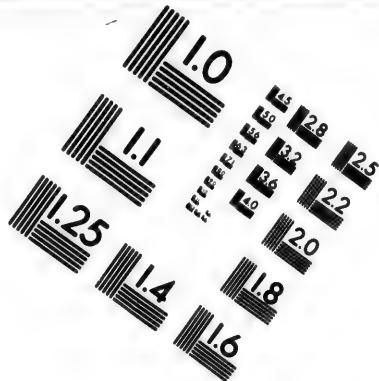
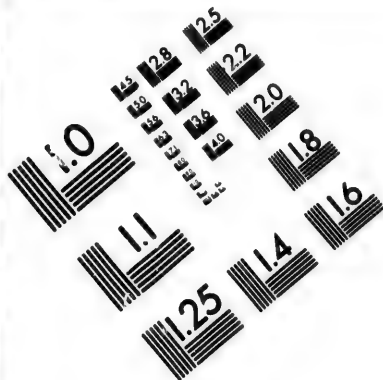
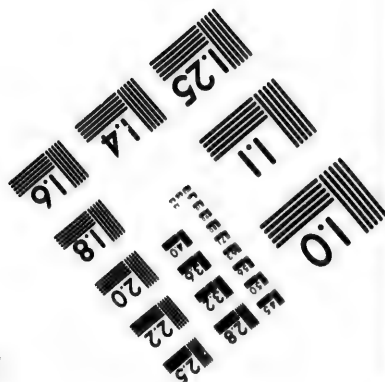
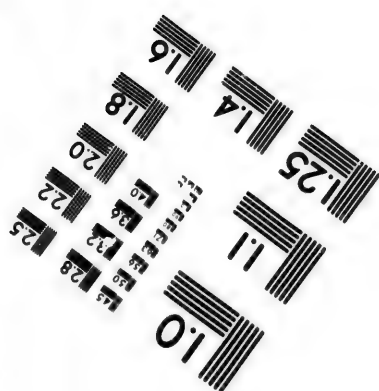
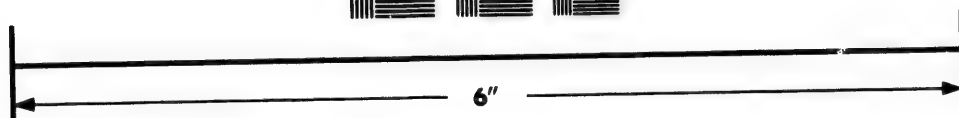
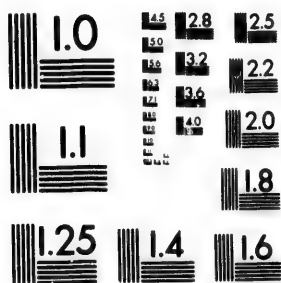


IMAGE EVALUATION TEST TARGET (MT-3)



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POSSESSORY RIGHT.

69. With regard to the proofs necessary to establish the possessory rights to a mining claim, section 2332 provides that "where such person or association, they and their grantors, have held and worked their claims for a period equal to the time prescribed by the statute of limitations for mining claims of the State or Territory where the same may be situated, evidence of such possession and working of the claims for such period shall be sufficient to establish a right to a patent thereto under this chapter, in the absence of any adverse claim."

70. This provision of law will greatly lessen the burden of proof, more especially in the case of old claims located many years since, the records of which, in many cases, have been destroyed by fire, or lost in other ways, during the lapse of time, but concerning the possessory right to which all controversy or litigation has long been settled.

71. When an applicant desires to make his proof of possessory right in accordance with this provision of law, he will not be required to produce evidence of location, copies of conveyances, or abstracts of title, as in other cases, but will be required to furnish a duly certified copy of the statute of limitations of mining claims for the State or Territory, together with his sworn statement giving a clear and succinct narration of the facts as to the origin of his title, and likewise as to the continuation of his possession of the mining ground covered by his application; the area thereof; the nature and extent of the mining that has been done thereon; whether there has been any opposition to his possession, or litigation with regard to his claim, and, if so, when the same ceased; whether such cessation was caused by compromise or by judicial decree, and any additional facts within the claimant's knowledge having a direct bearing upon his possession and *bona fides* which he may desire to submit in support of his claim.

72. There should likewise be filed a certificate, under

seal of the court having jurisdiction of mining cases within the judicial district embracing the claim, that no suit or action of any character whatever involving the right of possession to any portion of the claim applied for is pending, and that there has been no litigation before said court affecting the title to said claim or any part thereof for a period equal to the time fixed by the statute of limitations for mining-claims in the State or Territory as aforesaid, other than that which has been finally decided in favor of the claimant.

73. The claimant should support his narrative of facts relative to his possession, occupancy and improvements by corroborative testimony of any disinterested person or persons of credibility who may be cognizant of the facts in the case and are capable of testifying understandingly in the premises.

74. As a condition for the making of application for patent according to section 2325, there must be a preliminary showing of work or expenditure upon each location, either by showing the full amount sufficient to the maintenance of possession under section 2324 for the pending year; or, if there has been failure, it should be shown that work has been resumed so as to prevent relocation by adverse parties after abandonment.

The "pending year" means the calendar year in which application is made, and has no reference to a showing of work at date of the final entry.

75. This preliminary showing may, where the matter is unquestioned, consist of the affidavit of two or more witnesses familiar with the facts.

PROOF OF CITIZENSHIP OF MINING CLAIMANTS.

76. The proof necessary to establish the citizenship of applicants for mining patents must be made in the following manner: In case of an incorporated company, a certified copy of their charter or certificate of incorporation must be filed. In case of an association of persons unincorporated, the affidavit of their duly authorized agent, made upon his own knowledge or upon informa-

tion and belief, setting forth the residence of each person forming such association, must be submitted. This affidavit must be accompanied by a power of attorney from the parties forming such association, authorizing the person who makes the affidavit of citizenship to act for them in the matter of their application for patent.

77. In case of an individual or an association of individuals who do not appear by their duly authorized agent, showing whether he is a native or naturalized citizen, when and where born, and his residence.

78. In case an applicant has declared his intention to become a citizen or has been naturalized, his affidavit must show the date, place, and the court before which he declared his intention, or from which his certificate of citizenship issued, and present residence.

79. The affidavit of the claimant as to his citizenship may be taken before the register or receiver, or any other officer authorized to administer oaths within the land district; or, if the claimant is residing beyond the limits of the district, the affidavit may be taken before the clerk of any court of record or before any notary public of any State or Territory.

80. If citizenship is established by the testimony of disinterested persons, such testimony may be taken at any place before any person authorized to administer oaths, and whose official character is duly verified.

ADVERSE CLAIMS.

81. Section 2326 and the act of April 26, 1882, provide for adverse claims, fix the time within which they shall be filed to have legal effect, and prescribe the manner of their adjustment, etc.

82. An adverse mining claim must be filed with the register and receiver or the Land Office where the application for patent was filed, or with the register and receiver of the district in which the land is situated at the time of filing the adverse claim. It must be on the oath of the adverse claimant, or it may be verified by the oath

of any duly authorized agent or attorney-in-fact of the adverse claimant, cognizant of the facts stated.

83. Where an agent or attorney-in-fact verifies the adverse claim, he must distinctly swear that he is such agent or attorney, and accompany his affidavit by proof thereof.

84. The agent or attorney-in-fact must make the affidavit in verification of the adverse claim within the land district where the claim is situated.

85. The adverse notice must fully set forth the nature and extent of the interference or conflict; whether the adverse party claims as a purchaser for valuable consideration or as a locator; if the former, a certified copy of the original location, the original conveyance, a duly certified copy thereof, or an abstract of title from the office of the proper recorder should be furnished, or if the transaction was a merely verbal one he will narrate the circumstances attending the purchase, the date thereof and the amount paid, which facts should be supported by the affidavit of one or more witnesses, if any were present at the time, and if he claims as a locator he must file a duly certified copy of the location from the office of the proper recorder.

86. In order that the "*boundaries*" and "*extent*" of the claim may be shown, it will be incumbent upon the adverse claimant to file a plat showing his entire claim, its relative situation or position with the one against which he claims, and the extent of the conflict. This plat must be made from an actual survey by a United States deputy surveyor, who will officially certify thereon to its correctness; and in addition there must be attached to such plat of survey a certificate or sworn statement by the surveyor as to the approximate value of the labor performed or improvements made upon the claim by the adverse party or his predecessors in interest, and the plat must indicate the position of any shafts, tunnels or other improvements, if any such exist, upon the claim of the party opposing the application, and by which party said improvements were made: *Provided, however,* That, if the application for patent describes the claim

by legal subdivisions, the adverse claimant, if also claiming by legal subdivisions, may describe his adverse claim in the same manner without further survey or plat.

87. Upon the foregoing being filed within the sixty days as aforesaid, the register, or in his absence the receiver, will give notice in writing to *both parties* to the contest that such adverse claim has been filed, informing them that the party who filed the adverse claim will be required within thirty days from the date of such filing to commence proceedings in a court of competent jurisdiction to determine the question of right of possession, and to prosecute the same with reasonable diligence to final judgment, and that, should such adverse claimant fail to do so, his adverse claim will be considered waived and the application for patent be allowed to proceed upon its merits.

88. When an adverse claim is filed as aforesaid, the register or receiver will indorse upon the same the precise date of filing, and preserve a record of the date of notifications issued thereon; and thereafter all proceedings on the application for patent will be suspended, with the exception of the completion of the publication and posting of notices and plat, and the filing of the necessary proof thereof, until the controversy shall have been adjudicated in court, or the adverse claim waived or withdrawn.

89. Where an adverse claim has been filed and suit thereon commenced within the statutory period and final judgment determining the right of possession rendered in favor of the applicant, it will not be sufficient for him to file with the register a certificate of the clerk of the court, setting forth the facts as to such judgment, but he must, before he is allowed to make entry, file a certified copy of the judgment, together with the other evidence required by section 2326, Revised Statutes.

90. Where such suit has been dismissed a certificate of the clerk of the court to that effect or a certified copy of the order of dismissal will be sufficient.

91. In no case will a relinquishment of the ground in

controversy, or other proof, filed with the register or receiver be accepted in lieu of the evidence required.

92. Where an adverse claim has been filed, but no suit commenced against the applicant for patent within the statutory period, a certificate to that effect by the clerk of the State court having jurisdiction in the case, and also by the clerk of the circuit court of the United States for the district in which the claim is situated, will be required.

93. A party who is not an applicant for patent under section 2325, Revised Statutes, or the assignee of such applicant, is not entitled to make entry under said section, and in no case will the name of such party be inserted in the certificate of entry. This regulation has no reference to proceedings under section 2326.

94. Any party applying to make entry as *trustee* must disclose fully the nature of the trust and the name of the *cestui que trust*; and such trustee, as well as the beneficiaries, must furnish satisfactory proof of citizenship; and the names of beneficiaries, as well as that of the trustee, must be inserted in the final certificate of entry.

95. No entry will be allowed until the register has satisfied himself, by a careful examination, that proper proofs have been filed upon all the points indicated in official regulations in force, and that they show a sufficient *bona fide* compliance with the laws and such regulations.

96. The administration of the mining laws as prescribed by these regulations will be, so far as applicable, adopted for and extended to Alaska.

(1) The *ex-officio* register, receiver and surveyor-general, while acting as such, and their clerks and deputy surveyors, will be deemed subject to the laws and regulations governing the official conduct and responsibilities of similar officers and persons under general statutes of the United States.

(2) The Commissioner of the General Land Office will exercise the same general supervision over the execution of the laws as are or may be exercised by him in other mineral districts.

APPOINTMENT OF DEPUTY SURVEYORS OF MINING
CLAIMS—CHARGES FOR SURVEYS AND PUB-
LICATIONS—FEES OF REGISTERS
AND RECEIVERS, ETC.

97. Section 2334 provides for the appointment of surveyors of mineral claims, authorizes the Commissioners of the General Land Office to establish the rates to be charged for surveys and for newspaper publications.

Under this authority of law the following rates have been established as the maximum charges for newspaper publications in mining cases:

(1) Where a daily newspaper is designated, the charge shall not exceed seven dollars for each ten lines of space occupied, and where a weekly newspaper is designated as the medium of publication five dollars for the same space will be allowed. Such charge shall be accepted as full payment for publication in each issue of the newspaper for the entire period required by law.

It is expected that these notices shall not be so abbreviated as to curtail the description essential to a perfect notice, and the said rates established upon the understanding that they are to be in the usual body-type used for advertisements.

(2) For the publication of citations in contests or hearings involving the character of lands, the charges shall not exceed eight dollars for five publications in weekly newspapers, or ten dollars for publications in daily newspapers for thirty days.

98. The surveyors-general of the several districts will, in pursuance of said law, appoint in each land district as many *competent* deputies for the survey of mining claims as may seek such appointment; it being distinctly understood that all expenses of these notices and surveys are to be borne by the mining claimants and not by the United States; the system of making *deposits* for mineral surveys, as required by previous instructions, being hereby revoked as regards *field work*; the claimant having the option of employing *any* deputy surveyor within such district to do his work in the field.

99. With regard to the *platting* of the claim and other *office work* in the surveyor-general's office, that officer will make an estimate of the cost thereof, which amount the claimant will deposit with any assistant United States Treasurer, or designated depository in favor of the United States Treasurer, to be passed to the credit of the fund created by "individual depositors for surveys of the public lands," and file with the surveyor-general duplicate certificates of such deposit in the usual manner.

100. The surveyors-general will endeavor to appoint mineral deputy surveyors, so that one or more may be located in each mining district for the greater convenience of miners.

101. The usual oaths will be required of these deputies and their assistants as to the correctness of each survey executed by them.

The duty of the deputy mineral surveyor ceases when he has executed the survey and returned the field notes and preliminary plat thereof with his report to the surveyor-general. He will not be allowed to prepare for the mining claimant the papers in support of an application for patent, or otherwise perform the duties of an attorney before the land office in connection with a mining claim.

The surveyor-general and local land officers are expected to report any infringement of this regulation to this office.

102. The law requires that each applicant shall file with the register and receiver a sworn statement of all charges and fees paid by him for publication of notice and for survey, together with all fees and money paid the register and receiver, which sworn statement is required to be transmitted to this office for the information of the Commissioner.

103. Should it appear that excessive or exorbitant charges have been made by any surveyor or any publisher, prompt action will be taken with the view of correcting the abuse.

104. The fees payable to the register and receiver for filing and acting upon applications for mineral-land patents are five dollars to each officer, to be paid by the

applicant for patent at the time of filing, and the like sum of five dollars is payable to each officer by an adverse claimant at the time of filing his adverse claim. (Sec. 2238, R. S., paragraph 9.)

105. All fees or charges under this law may be paid in United States currency.

106. The register and receiver will, at the close of each month, forward to this office an abstract of mining applications filed, and a register of receipts, accompanied with an abstract of mineral lands sold and an abstract of adverse claims filed.

107. The fees and purchase money received by registers and receivers must be placed to the credit of the United States in the receiver's monthly and quarterly account, charging up in the disbursement account the sums to which the register and receiver may be respectively entitled as fees and commissions, with limitations in regard to the legal maximum.

PROCEEDINGS BEFORE THE REGISTER AND RECEIVER
AND SURVEYOR-GENERAL IN CONTESTS AND
HEARINGS TO ESTABLISH THE
CHARACTER OF LANDS.

108. The "Rules of Practice in cases before the United States district land offices, the General Land Office, and the Department of the Interior," approved August 13, 1885, will, as far as applicable, govern in all cases and proceedings arising in contests and hearings to determine the mineral or non-mineral character of lands.

109. The only tracts of public land that will be withheld from entry as agricultural land on account of its mineral character will be such as are returned by the surveyor-general as mineral; and even the presumption which is supported by such return may be overcome by testimony taken at a regular hearing.

110. Hearings to determine the character of land, as practically distinguished, are of two kinds:

(1) Where lands which are sought to be entered and patented as agricultural are alleged by affidavit to be

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WHITE PASS-SKAGWAY TRAIL, (September, 1897).





SKAGWAY HOTEL.
SALMON CANNERY, YES BAY.

WAREHOUSE, ST. MICHAELS.

U. S. CUSTOM HOUSE, SKAGWAY.
SAW-MILL, SKAGWAY.

mineral, or when sought as mineral, their non-mineral character is alleged.

The proceedings relative to this class are in the nature of a contest between two or more known parties.

(2) When lands are returned as mineral by the surveyor-general.

When such lands are sought to be entered as agricultural notice must be given by publication for thirty days with posting in the local office for the same period.

111. At the hearings under either of the aforesaid classes the claimants and witnesses will be thoroughly examined with regard to the character of the land; whether the same has been thoroughly prospected; whether or not there exists within the tract or tracts claimed any lode or vein of quartz or other rock in place, bearing gold, silver, cinnabar, lead, tin or copper, or other valuable deposit which has ever been claimed, located, recorded or worked; whether such work is entirely abandoned or whether occasionally resumed; if such lode does exist, by whom claimed, under what designation and in which sub-division of the land it lies; whether any placer mine or mines exist upon the land; if so, what is the character thereof—whether of the shallow-surface description or of the deep cement, blue lead or gravel deposits; to what extent mining is carried on when water can be obtained and what the facilities are for obtaining water for mining purposes; upon what particular ten-acre sub-divisions mining has been done, and at what time the land was abandoned for mining purposes, if abandoned at all.

112. The testimony should also show the agricultural capacities of the land, what kind of crops are raised thereon and the value thereof; the number of acres actually cultivated for crops of cereals or vegetables and within which particular ten-acre sub-division such crops are raised; also which of these sub-divisions embrace the improvements, giving in detail the extent and value of the improvements, such as house, barn, vineyard, orchard, fencing, etc., and mining improvements.

113. The testimony should be as full and complete as

possible; and in addition to the leading points indicated above, where an attempt is made to prove the mineral character of lands which have been entered under the agricultural laws, it should show at what date, if at all, valuable deposits of mineral were first known to exist on the lands.

114. When the case comes before this office such decision will be made as the law and the facts may justify; and in cases where a survey is necessary to set apart the mineral from the agricultural land, the necessary instructions will be given to enable the proper party *at his own expense*, to have the work done, at his option, either by United States deputy, county or other local surveyor; the survey in such case, where the claims to be segregated are vein or lode claims, must be executed in such manner as will conform to the requirements in section 2320, U. S. Revised Statutes, as to length and width and parallel end lines.

115. Such survey when executed must be properly sworn to by the surveyor, either before a notary public, officer of a court of record, or before the register or receiver, the deponent's character and credibility to be properly certified to by the officer administering the oath.

116. Upon the filing of the plat and field notes of such survey, duly sworn to as aforesaid, you will transmit the same to the surveyor-general for his verification and approval; who, if he finds the work correctly performed, will properly mark out the same upon the original township plat in his office, and furnish authenticated copies of such plat and description both to the proper local land office and to this office, to be affixed to the duplicate and triplicate township plats respectively.

117. With the copy of plat and description furnished the local office and this office, must be a diagram tracing, verified by the surveyor-general, showing the claim or claims segregated, and designating the separate fractional agricultural tracts in each 40-acre legal subdivision by the proper lot number, beginning with No. 1 in each section, and giving the area in each lot, the same as pro-

vided in paragraph 45, in the survey of mining claims on surveyed lands.

118 The fact that a certain tract of land is decided upon testimony to be mineral in character is by no means equivalent to an award of the land to a miner. A miner is compelled by law to give sixty days' publication of notice, and posting of diagrams and notices, as a preliminary step; and then, before he can enter the land, he must show that the land yields mineral; that he is entitled to the possessory right thereto in virtue of compliance with local customs or rules of miners, or by virtue of the statute of limitations; that he or his grantors have expended, in actual labor and improvements, an amount of not less than five hundred dollars thereon, and that the claim is one in regard to which there is no controversy, or opposing claim. After all these proofs are met, he is entitled to have a survey made at his own cost where a survey is required, after which he can enter and pay for the land embraced by his claim.

119. Blank forms for proofs in mineral cases are not furnished by the General Land Office.

THOMAS H. CARTER,
Commissioner.

Approved December 10, 1891.

JOHN W. NOBLE,
Secretary.

DREDGE-BOAT MINING.

Several movements have been inaugurated with the view to extracting minerals from the beds of rivers or river bars in Alaska, but the consent of the Government has in no instance been given, and the mineral laws of the United States do not warrant the employment of the methods proposed. Upon this subject Honorable Binger Hermann, Commissioner of the General Land Office, in a communication dated January 3, 1898, and addressed to The Honorable, the Secretary of the Interior, said:

"I have the honor to acknowledge the receipt of a letter relative to the right to extract mineral from the beds of rivers or from river bars, in Alaska.

"Mr. ——— states, in substance, that he is interested in a company which has made investments with a view to operating vessels on those rivers of Alaska where gold is presumably to be found; that the company contemplates the use of pumps or other methods suitable to the extraction of the metal from the beds of streams or bars therein, and asks if such operations would be legal.

"It is to be reminded that, as no specific case is now before me for decision, anything that may be here said upon the subject can amount only to an expression of opinion.

"The operations of the mineral land laws, section 2318 *et seq.*, U. S. Revised Statutes, and acts supplemental thereto or amendatory thereto, were extended to Alaska by the act of May 17, 1884 (23 Stats. 24).

"It is contemplated by the law that persons desirous of taking minerals from the public domain shall locate a claim, the boundaries of which must be plainly marked upon the ground. The claim, as the term is used in the statutes, is something tangible, a particular portion of the earth's surface susceptible of identification, and, in my opinion, there is no legal warrant for the extraction of mineral from the public domain except the mining be done within the limits of such a claim as contemplated by law, the possessory title to which may ripen into a complete legal title by the issuance of a United States patent.

"Further, the question might arise whether or not such operations as are described by Mr. ——— would not render the company or its members liable to the penalty prescribed by section 10 of chapter 907 (p. 802) U. S. Supplemental Revised Statutes, and attention is respectfully directed to said section and to section 6 of said chapter (p. 801)."

DEPARTMENT OF THE INTERIOR,

GENERAL LAND OFFICE,

Washington, D. C., October 12, 1892.

Registers and Receivers, United States Land Offices:

GENTLEMEN: Attached is a copy of the act of Congress of August 4, 1892, entitled, "An act to authorize the entry of lands chiefly valuable for building-stone under the placer mining laws."

The first section of said act extends the mineral land laws already existing so as to bring land chiefly valuable for building-stone within the provisions of said law to the extent of authorizing a placer entry of such land. The proviso to said first section excludes lands reserved for the benefit of the public schools or donated to any State from entry under the act.

In cases that may arise hereafter in reference to any lands subject to entry under the mining laws, you will be governed by said act in admitting such entries. The proper instructions for your guidance in so doing may be found in official circular of December 10 1891, entitled "United States Mining Laws and Regulations Thereunder," to which you are referred, and your special attention is called to the law and instructions therein relating to placer claims.

It is not the understanding of this office that the first section of said act of August 4, 1892, withdraws land chiefly valuable for building-stone from entry under any existing law applicable thereto.

The second section of said act of August 4, 1892, makes the timber and stone act of June 3, 1878 (20 Stat., 89), applicable to all the public-land States. You will observe the same in acting upon applications for entries in your respective districts. For instructions you are referred to the general circular of February 6, 1892, pages 35 to 38 inclusive.

In allowing placer entries for stone chiefly valuable for building purposes, under the first section of the act

of August 4, 1892, you will make a reference to said act on the entry papers returned.

Very Respectfully,

W. M. STONE,

Acting Commissioner.

Approved October 12, 1892.

GEO. CHANDLER,

Acting Secretary.

AN ACT to authorize the entry of lands chiefly valuable for building stone under the placer mining laws.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That any person authorized to enter lands under the mining laws of the United States may enter lands that are chiefly valuable for building stone under the provisions of the law in relation to placer mineral claims: *Provided,* That lands reserved for the benefit of the public schools or donated to any State shall not be subject to entry under this act.

SEC. 2. That an act entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," approved June third, eighteen hundred and seventy-eight, be, and the same is hereby, amended by striking out out the words "States of California, Oregon, Nevada and Washington Territory" where the same occur in the second and third lines of said act, and insert in lieu thereof the words, "public-land States," the purpose of this act being to make said act of June third, eighteen hundred and seventy-eight, applicable to all the public-land States.

SEC. 3. That nothing in this act shall be construed to repeal section twenty-four of the act entitled "An act to repeal timber-culture laws, and for other purposes,"

approved March third, eighteen hundred and ninety-one.

Approved August 4, 1892.

A. DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, D. C., October 24, 1892.
Registers and Receivers, United States Land Offices:

GENTLEMEN: In addition to instructions contained in general circular of February 6, 1892, pages 35 to 38, inclusive, and pages 147 and 148, in relation to the timber and stone act of June 3, 1878, extended by the act of August 4, 1892, referred to in circular A of October 12, 1892, you are advised as follows:

1. That entries made under section *one* of said act are required to be kept and reported in consecutive and numerical order in your mineral land series.
2. That entries made under section *two* of said act are required to be kept and reported in consecutive numerical order in your regular agricultural cash series.

Necessary additional blank forms for entries under said act are as follows:

Form Nos. 4—357; 4—363; 4—370; 4—371; 4—537;
—658 c.

Very respectfully,

W. M. STONE,
Acting Commissioner.

APPENDIX B.

DIGEST OF CANADIAN MINING LAWS.

The regulations governing placer mining along the Yukon River and its tributaries in the Northwest Territory, adopted by the Canadian Government, are as follows:

DEFINITIONS.

Bar Diggings shall mean any part of a river over which the water extends when the water is in its flooded state, and which is not covered at low water.

Mines on Benches shall be known as bench diggings, and shall, for the purpose of defining the size of such claims, be excepted from dry diggings.

Dry Diggings shall mean any mine over which a river never extends.

Miner shall mean a male or female over the age of 18, but not under that age.

Claims shall mean the personal right of property in a placer mine or diggings during the time for which the grant of such mine or diggings is made.

Legal Post shall mean a stake standing not less than four feet above the ground and squared on four sides for at least one foot from the top. Both sides so squared shall measure at least four inches across the face. It shall also mean any stump or tree cut off and squared or faced to the above height and size.

Close Season shall mean the period of the year during which placer mining is generally suspended. The period to be fixed by the gold commissioner in whose district the claim is situated.

Locality shall mean the territory along a river (tributary of the Yukon) and its affluents.

Mineral shall include all minerals whatsoever other than coal.

NATURE AND SIZE OF CLAIMS.

1. Bar Diggings.—A strip of land 100 feet wide at high-water mark and thence extending along into the river to its lowest water-level.

2. The sides of a claim for bar-diggings shall be two parallel lines run as nearly as possible at right angles to the stream, and shall be marked by four legal posts, one at each end of the claim, at or about high-water mark; also one at each end of the claim at or about the edge of the water. One of the posts at high-water mark shall be legibly marked with the name of the miner and the date upon which the claim is staked.

3. Dry diggings shall be 100 feet square, and shall have placed at each of its four corners a legal post, upon one of which shall be legibly marked the name of the miner and the date upon which the claim was staked.

4. Creek and river claims shall be 500 feet long, measured in direction of the general course of the stream, and shall extend in width from base to base of the hill or bench on each side, but when the hill or benches are less than 100 feet apart, the claim may be 100 feet in depth. The sides of a claim shall be two parallel lines run as nearly as possible at right angles to the stream. The sides shall be marked with legal posts at or about the edge of the water and at the rear boundaries of the claim. One of the legal posts at the stream shall be legibly marked with the name of the miner and the date upon which the claim was staked.

5. Bench claims shall be 100 feet square.

6. In defining the size of claims, they shall be measured horizontally, irrespective of inequalities on the surface of the ground.

NOTE.—The regulation relating to the length of a claim was amended August 8th by the Dominion Government; the new regulation limits the length of a claim to 100 feet, running along the stream.

7. If any person or persons shall discover a new mine, and such discovery shall be established to the satisfaction of the gold commissioner, a claim for the bar diggings 750 feet in length may be granted.

A new stratum of auriferous earth or gravel situated in a locality where the claims are abandoned shall, for this purpose, be deemed a new mine, although the same locality shall have previously been worked at a different level.

8. The forms of application for a grant for placer mining and the grant of the same shall be those contained in forms "H" and "I" in the schedule hereto.

9. A claim shall be recorded with the gold commissioner in whose district it is situated within three days after the location thereof, if it is located within ten miles of the commissioner's office. One extra day shall be allowed for making such record for every additional ten miles and fraction thereof.

10. In the event of the absence of the gold commissioner from his office, entry for a claim may be granted by any person whom he may appoint to perform his duties in his absence.

11. Entry shall not be granted for a claim which has not been staked by the applicant in person, in the manner specified in these regulations. An affidavit that the claim was staked out by the applicant shall be embodied in form "H" of the schedule hereto.

12. An entry fee of \$15 shall be charged the first year and an annual fee of \$100 for each of the following years. This provision shall apply to the locations for which entries have already been granted.

13. After the recording of a claim, the removal of any post by the holder thereof, or any person acting in his behalf, for the purpose of changing the boundaries of his claim, shall act as a forfeiture of the claim.

14. The entry of every holder for a grant for placer mining must be renewed and his receipt relinquished and replaced every year, the entry fee being paid each year.

15. No miner shall receive a grant for more than one

mining claim in the same locality; but the same miner may hold any number of claims by purchase, and any number of miners may unite to work their claims in common upon such terms as they may arrange, provided such agreement be registered with the gold commissioner and a fee of \$5 paid for each registration.

16. Any miner or miners may sell, mortgage or dispose of his or their claims, provided such disposal be registered with, and a fee of \$2 paid to the gold commissioner, who shall thereupon give the assignee a certificate in form "J" in the schedule hereto.

17. Every miner shall, during the continuance of his grant, have the exclusive right of entry upon his own claim for the miner-like working thereof, and the construction of a residence thereon, and shall be entitled exclusively to all the proceeds realized therefrom; but he shall have no surface rights therein, and the gold commissioner may grant to the holders of adjacent claims such rights of entry thereon as may be absolutely necessary for the working of their claims, upon such terms as may to him seem reasonable. He may also grant permits to miners to cut timber thereon for their own use upon payment of the dues prescribed by the regulations in that behalf.

18. Every miner shall be entitled to the use of so much of the water naturally flowing through or past his claim, and not already lawfully appropriated, as shall in the opinion of the gold commissioner be necessary for the due working thereof, and shall be entitled to drain his own claim free of charge.

19. A claim shall be deemed to be abandoned and open to occupation and entry by any person when the same shall have remained unworked on working days by the grantee thereof, or by some person on his behalf, for the space of seventy-two hours, unless sickness or other reasonable cause may be shown to the satisfaction of the gold commissioner, or unless the grantee is absent on leave given by the commissioner, and the gold commissioner, upon obtaining evidence satisfactory to himself

that this provision is not being complied with, may cancel the entry given for a claim.

20. If the land upon which a claim has been located is not the property of the crown, it will be necessary for the person who applies for entry to furnish proof that he has acquired from the owner of the land the surface right before entry can be granted.

21. If the occupier of the lands has not received a patent therefor, the purchase money of the surface rights must be paid to the crown, and a patent of the surface rights will issue to the party who acquired the mining rights. The money so collected will either be refunded to the occupier of the land when he is entitled to a patent therefor, or will be credited to him on account of payment for land.

22. When the party obtaining the mining rights can not make an arrangement with the owner thereof for the acquisition of the surface rights, it shall be lawful for him to give notice to the owner, or his agent, or the occupier to appoint an arbitrator to act with another arbitrator named by him, in order to award the amount of compensation to which the owner or occupant shall be entitled. The notice mentioned in this section shall be according to form, to be obtained upon application from the gold commissioner for the district in which the lands in question lie, and shall, when practicable, be personally served on such owner or his agent, if known, or occupant, and after reasonable efforts have been made to effect personal service without success, then such notice shall be served upon the owner or agent within a period to be fixed by the gold commissioner before the expiration of the time limited in such notice. If the proprietor refuses or declines to appoint an arbitrator, or when, for any other reason, no arbitrator is appointed by the proprietor in the time limited therefor in the notice provided by this section, the gold commissioner for the district in which the lands in question lie shall, on being satisfied by affidavit that such notice has come to the knowledge of such owner, agent, or occupant, or that such owner, agent, or occupant, wilfully evades the service

of such notice, or cannot be found, and that reasonable efforts have been made to effect such service, and that the notice was left at the last place of abode of such owner, agent or occupant, appoint an arbitrator on his behalf.

23. (a) All arbitrators appointed under the authority of these regulations shall be sworn before a justice of the peace to the impartial discharge of the duties assigned to them, and they shall forthwith proceed to estimate the reasonable damages which the owner or occupant of such lands, according to their several interests therein, shall sustain by reason of such prospecting and mining operations.

(b) In estimating such damages the arbitrators shall determine the value of the land, irrespectively of any enhancement thereof from the existence of mineral therein.

(c) In case such arbitrators cannot agree, they may select a third arbitrator, and when the two arbitrators cannot agree upon a third arbitrator, the gold commissioner for the district in which the lands in question lie shall select such third arbitrator.

(d) The award of any two such arbitrators made in writing shall be final, and shall be filed with the gold commissioner for the district in which the lands lie.

If any cases arise for which no provision is made in these regulations, the provisions of the regulations governing the disposal of mineral lands other than coal lands approved by his excellency the governor in council on on the 9th of November, 1889, shall apply.

APPLICATION FOR GRANT FOR PLACER MINING CLAIM
AND AFFIDAVIT OF APPLICANT.

Form "H."

I (or we), of, hereby apply under the Dominion Mining Regulations for grant of a claim for placer mining as defined in the said regulations in

..... (here describe locality), and I (or we) solemnly swear:

First. That I (or we) am (or are) to the best of my (or our) knowledge and belief, the first discoverer (or discoverers) of the said deposit, or

Second. That the said claim was previously granted to (here name the last grantee), but has remained unworked by the said grantee for not less than

Third. That I (or we) am (or are) unaware that the land is other than vacant Dominion lands.

Fourth. That I (or we) did on the day of mark out on the ground in accordance in every particular with the provisions of the mining regulations for the Yukon River and its tributaries, the claim for which I (or we) make this application, and that in so doing I (or we) did not encroach on any other claim or mining location previously laid out by any other person.

Fifth. That the said claim contains, as nearly as I (or we) could measure or estimate, an area of square feet, and that the description (and sketch, if any) of this date hereto attached signed by me (or us) sets (or set) forth in detail to the best of my (or our) knowledge and ability its position, form and dimensions.

Sixth. That I (or we) make this application in good faith to acquire the claim for the sole purpose of mining, prosecuted by myself (or us), or by myself and associates, or by my (or our) assigns.

Sworn before me

At....., this day of,
18....

(Signature)

.....

GRANT FOR PLACER CLAIM.

Form "I."

DEPARTMENT OF THE INTERIOR,

Agency, 18....

In consideration of the payment of the fee prescribed by clause 12 of the mining regulations of the Yukon River and its tributaries by..... (A. B.) accompanying his (or their) application No., dated, 18...., for a mining claim in (here insert description of locality), the minister of the interior hereby grants to the said (A. B.) for the term of one year from the date hereof the exclusive right of entry upon the claim (here describe in detail the claim).

Granted.—For the miner-like working thereof and the construction of a residence thereon, and the exclusive right to all the proceeds derived therefrom. That the said (A. B.) shall be entitled to the use of so much water naturally flowing through or past his (or their) claim, and not already lawfully appropriated, as shall be necessary for the due working thereof, and to drain his (or their) claim free of charge.

This grant does not convey to the said (A. B.) any surface right in the said claim or any right of ownership in the soil covered by the said claim, and the said grant shall lapse and be forfeited unless the claim is continuously and in good faith worked by the said (A. B.) or his (or their) associates.

The rights hereby granted are those laid down in the aforesaid mining regulations and no more, and are subject to all the provisions of the said regulations, whether the same are expressed herein or not.

.....

Gold Commissioner.("Klondike,"—*Chicago Record*.)

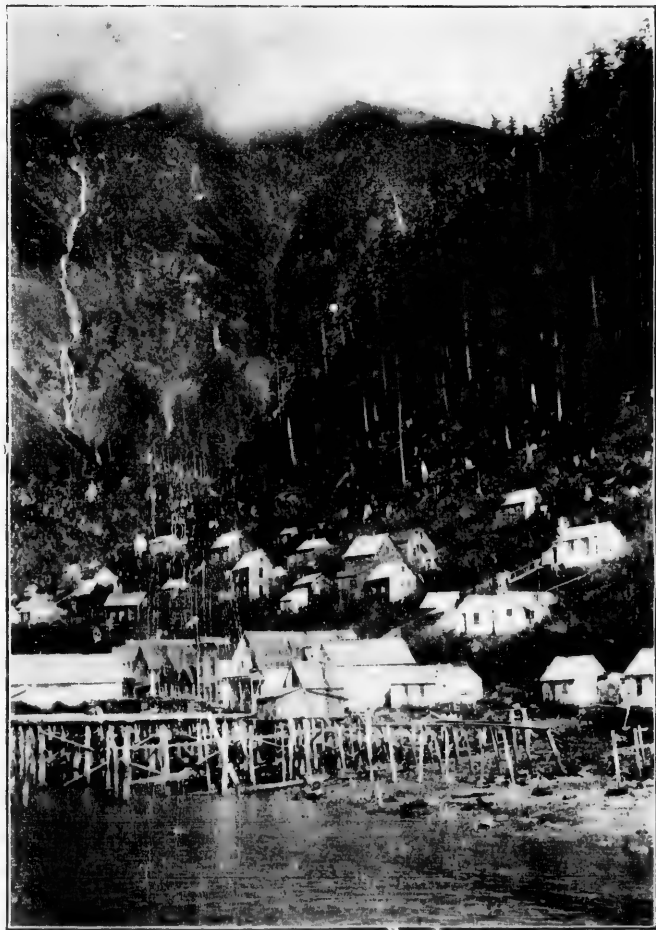
APPENDIX C.

GLOSSARY OF MINING TERMS MOST
FREQUENTLY USED.

Amalgam: In some ore the gold is so fine and scarce that it must be dissolved in mercury in order to save it; such mixture of mercury (quicksilver) and gold is called amalgam.

Burn: To burn a lay is to thaw out a hole in the ground by building a fire over it.

Claim: The territory one man is allowed by law or local, common consent to stake out for himself. The size differs and is fixed by agreement among the miners in any particular locality. It is a section of a creek of a certain length—sometimes 200 feet, extending from rim to rim in width. The reason of this variableness in the size of claims on different creeks is that on some greater length is required to make it worth a man's while to work them. The pay deposits may be scattered so that a man could make wages only by working here and there over a large territory. Of course, the conditions surrounding the first discovery on a creek are the basis for fixing the size of a claim on that stream. The discoverer of a new field is allowed two claims, while others are permitted to take but one at a time. However, when a locator has worked out his assessment of a few days' work, he is at liberty to take another. When a sufficient number of men arrive on a new creek to make it impracticable to work together in harmony, it is customary to hold a meeting and elect one



SOUTHERN WATER FRONT, JUNEAU.



CHILKAT VALLEY, CHILKOOT VALLEY AND DYEA INLET (in May).

of their number as register or clerk, and thereafter a record is made of all locations and all transfers, for which a small fee is usually charged.

Color: When "dirt" is very carefully washed and the result at the bottom of the pan is the merest speck of the metal it is said to show "color."

Cradle: See "Rocker."

Dirt: Earth in which valuable minerals, especially gold, is expected.

Discovery: The point where gold is first found in any territory is called "Discovery Claim," and the other claims are numbered 1, 2, 3, etc., in both directions from discovery claim.

Drift: A horizontal opening in the side of a hill, creek bank, or leading from a shaft.

Dust: Gold in the form it is taken from placer mines. Particles about the size of a pea and larger are called nuggets.

Float: Pieces of rock, quartz or ore detached from the main vein, ledge, lode or deposit of like material.

Fool's Gold: Iron pyrites; so named from its resemblance to the precious metal—pyrites will crush under the hammer, while gold flattens.

Grindstone: Three poles, each about 8 feet in length, used to support a stove on the snow.

Grub Stake: It frequently happens that a person desirous of sharing the wealth of an unexplored country is not in a position to visit it in person and elects to buy an outfit of tools, clothing and food for some prospector, whom he sends into the country with the understanding that they become equal partners. Such a transaction is called grub-staking.

Hungry Ore: Worthless rock which from its appearance leads to the belief that it contains gold or other valuable mineral.

Lay: The privilege of working another man's claim.

Pan: A gold digger's pan resembles an ordinary frying pan without the handle. It is usually about a foot in diameter at the bottom, with flaring sides four or five inches deep. It is made of any suitable material, profusely pressed steel or copper.

Pay Dirt: If a pan of dirt will yield 10 cents worth of gold it is called pay-dirt. If it yields 15 cents worth it is promising dirt, and 20 cents makes it rich. It is said that some pans in the Klondike run as high as \$1,000, and many claims are said to average from \$75 to \$200 to the pan.

Placer Gold Mines: Mines where the gold is found in the pure state in the form of nuggets or grains, and can be separated by the simple process of washing in water. The Supreme Court of the United States has defined a placer claim in the following language: "Ground within defined boundaries which contains mineral in its earth, sand or gravel; ground that includes valuable deposits in any place, that is not fixed in rock, but which are in a loose state and may in most cases be collected by washing or amalgamation without milling."

Prospector: From a mining standpoint is one who makes a business of searching for deposits of precious metals or other minerals of recognized value.

Quartz Gold Mines: Mines where the gold is embedded or fixed in quartz rock, which requires heavy machinery to crush before the metal can be extracted.

Riffe: See "Sluice box."

Rocker or Cradle: A box with rockers, something after the fashion of a baby's cradle, in which the pay gravel is placed and then rocked while water is pouring through.

Shaft: A vertical hole sunk in the ground like a well.

Sluice Box or Riffle: A long narrow trough of planking with slats or riffles across the bottom. The box is built on an incline, and as water and gravel are washed down the gold is caught by the riffles; sometimes mercury is used in connection with this appliance.

Tailings: The gold-laden sands, etc., which escape from the pan or other washing apparatus in placer mining. There are Chinamen and others still making good wages working tailings of the early California placer mines.

Tenderfoot: A person unacquainted with the ways of frontier life, or mining camps; a greenhorn.

Whim: A vein or lode which does not meet expectations.

WORDS COMMONLY USED IN ALASKA AND
FOR WHICH THERE ARE NO ENGLISH
EQUIVALENTS.—(PETROFF.)

Barabara: A term of Siberian origin for a semi-subterranean hut or dwelling.

Beluga: The white grampus or white whale.

Bidar: A Kamchatkan word; an open boat with a wooden frame and covered with seal, sea-lion or walrus skin.

Bidárka: A skin canoe of the Aleutians, covered all over with the exception of one, two or three circular openings to accommodate as many paddlers.

Kaiak : Eskimo skin-canoe.

Kamleika : A Siberian term, water-proof shirt of seal, whale or bear gut.

Parka : A Kamchatkan word; upper garment of fur, with small head-opening and sleeves varying in length.

Shamán : A Kamchatkan term for sorcerer or medicine man, used by many tribes who once were subject to Russian influence.

Toyón : Kamchatkan term for chief, introduced by Russians. Tuyúk and Tookoo with Aleutians and other tribes.

Túndra : A Siberian term, a moor, morass or swampy plain, producing a dense growth of mosses and grasses over a frozen sub-soil and ice, which does not thaw to a greater depth than eighteen inches below the surface.

Túngak : A term used by certain Eskimo tribes for a shaman or conjuror.

APPENDIX D.

Governor John G. Brady, of Alaska, in his report to the Secretary of the Interior for 1897, gives the following as an outfit for two men for fourteen months, food and clothing, Sitka, Alaska, prices, August 1, 1897.

4 barrels best flour at \$6.....	\$24.00
200 pounds granulated sugar, at 6 cents.....	12.00
200 pounds navy beans, at 4 cents.....	8.00
100 pounds corn meal.....	2.75
250 pounds breakfast bacon, at 12½ cents.....	31.25

75 pounds island rice, 6 cents.....	\$ 4.50
2 cases Eagle Milk.....	17.50
20 pounds salt.....	.35
25 pounds best Mocha and Java coffee.....	8.75
10 pounds best tea.....	4.50
8 pounds soda.....	.70
20 pounds baking powder.....	9.20
25 pounds dried apricots.....	2.50
25 pounds dried peaches.....	2.50
25 pounds dried apples.....	2.25
2 boxes candles.....	5.00
1 box pepper, 25 cents; soap, \$1.....	1.25
3 boxes yeast, 25 cents, one-half tin matches, 50 cents.....	.75
1 Yukon stove, complete.....	6.00
3 half-spring shovels.....	3.00
3 miner's picks.....	3.00
1 double-bladed axe, complete.....	1.50
13 oil sacks, 50's and 100's.....	7.55
2 gold pans, \$1; 1 coffee mill 35 cents.....	1.35
12 pounds condensed onions.....	5.00
10 pounds evaporated spuds.....	2.50
40 pounds rope.....	5.00
Toilet soap.....	.50
6 tin plates, 50 cents; 3 granite cups, 50 cents	1.00
1 coffee-pot, 40 cents; whetstone, 20 cents....	.60
Awls, shoe thread, wax, bristles, etc.....	1.00
2 fry-pans, \$1; fish line and hooks, 50 cents...	1.50
2 pkgs. extract of beef.....	1.00
6 assorted files, 60 cents; oil blacking, 50 cents	1.10
1 package chocolate.....	.30
2 miner's candlesticks.....	1.00
1 iron brace and bits.....	1.75
24 pounds raisins, 10 cents.....	2.40
Outfit for boat:	
30 pounds nails, \$1.50; 5 pounds white lead, 60 cents.....	2.10
Candle wicking, 20 cents; $\frac{1}{4}$ -inch auger, \$1.25...	1.45
Oakum, 25 cents; pitch, 25 cents.....	.50
1 handsaw, \$1.50; 1 jack plane, 75 cents.....	2.25

Paint brush, 25 cents; 4 candle wicks, 40 cents	\$ 65
2 pairs oars, \$1.75; oarlocks, 40 cents.....	2.15
3 pairs heavy wool blankets.....	20.50
2 pairs pack straps, \$3; 1 hand ax, \$1	4.00
2 pairs hip r. boots, leather soles, \$6.....	12.00
2 pairs high-top lace shoes.....	7.50
4 pairs German socks, 75 cents.....	3.00
2 pairs lumberman's rubbers.....	3.00
2 pairs suspenders.....	75
4 suits heavy wool underwear.....	12.00
4 dark-blue flannel overshirts.....	8.00
4 pairs Mackinaw pants.....	11.00
2 pairs Mackinaw coats.....	6.00
2 blanket coats.....	8.00
12 pairs socks, wool.....	4.50
6 pairs wool mittens.....	3.00
40 yards mosquito netting.....	1.00
11 buckskin pouches.....	5.00
1 magnet, 50 cents; 2 pairs goggles, 50 cents	1.00
2 pairs snow glasses.....	1.00
1 dozen bandana handkerchiefs.....	1.00
1 lot spoons, knives and forks.....	1.35
1 butcher knife.....	.75
4 oil blankets.....	6.00
1 lot buckets, pans, cooking utensils, etc.....	3.35
2 southwesters, \$1; tent, \$12.....	13.00
1 41 Colt's revolver and ammunition....	15.00
1 Winchester rifle and ammunition	18.00
2 fur caps.....	2.50
1 whipsaw.....	5.50

Total..... \$371.60

APPENDIX E.

TABLE OF DISTANCES.

DISTANCES FROM JUNEAU.

MILES.

Haines Mission (Chilkat).....	80
Dyea.....	100
Head of canoe navigation.....	106
Summit of Chilkoot Pass.....	114
Head of Lake Lindeman.....	123
Foot of Lake Lindeman.....	127
Head of Lake Bennett.....	128
Foot of Lake Bennett.....	153
Caribou Crossing.....	156
Foot of Tagish Lake.....	173
Head of Lake Marsh.....	178
Foot of Lake Marsh.....	197
Head of Canyon.....	223
Foot of Canyon.....	224
Head of White Horse Rapids.....	225
Tahkeena River.....	240
Head of Lake Le Barge.....	256
Foot of Lake Le Barge.....	284
Hootalinqua.....	316
Cassiar Bar.....	342
Big Salmon River.....	349
Little Salmon River.....	385
Five Fingers Rapids.....	444
Rink Rapids.....	450
Pelly River.....	503
White River.....	599
Stewart River.....	609

65
2.15
20.50
4.00
12.00
7.50
3.00
3.00
75
12.00
8.00
11.00
6.00
8.00
4.50
3.00
1.00
5.00
1.00
1.00
1.00
1.35
.75
6.00
3.35
13.00
15.00
18.00
2.50
5.50
\$371.60

	MILES.
Sixty-Mile Post.....	629
Klondike.....	678
Fort Reliance.....	682
Forty-Mile Post.....	728
Fort Cudahy.....	728
Circle City.....	898
Forty-Mile to Diggings.....	70
Circle City to Diggings.....	50
Mouth of Cook Inlet.....	700
Turnagain Arm.....	800
Six-Mile Creek.....	825
Funter Bay.....	47
Berner Bay.....	50
Sitka.....	140
Snettisham.....	32
Sum Dum.....	50
Wrangell.....	160

DISTANCES VIA VICTORIA, BRITISH COLUMBIA.

FROM SEATTLE.

	MILES.
Mary's Island.....	655
Metlakatla.....	683
Loring.....	718
Fort Wrangell.....	808
Juneau.....	960
Berner Bay.....	1,015
Dyea.....	1,060

FROM SITKA.

	MILES.
Killisnoo.....	70
Juneau.....	160

FEET.

629
678
682
728
728
898
70
50
700
800
825
47
50
140
32
50
160

MILES' GLACIER.



FEET.

655
683
718
808
960
1,015
1,060

MILES.

70
160



WHITE PASS-SKAGWAY TRAIL.

WHITE PASS—SKAGWAY TRAIL.

PORT ETCHES—HINCHINBROOK ISLAND.





FORT WRANGELL.

ALASKA.

193

	MILES.
Hoona	120
Dyea.....	193
Yakutat.....	220
Nutchk (Prince William Sound, direct).....	450
Kadiak.....	550
Sunrise City, Cook Inlet.....	785
Karluk.....	610
Sandpoint.....	880
Unga.....	874
Belkofsky.....	
Unalaska (Dutch Harbor).....	1,150

FROM UNALASKA.

(Dutch Harbor.)

	MILES.
Seal Islands.....	240
St. Michael.....	850

APPENDIX F.

NEWSPAPERS PUBLISHED IN ALASKA.

- The Alaskan*, published at Sitka, weekly.
North Star, published at Sitka, monthly.
Alaska Mining Record, published at Juneau, weekly.
Alaska Searchlight, published at Juneau, weekly.
Alaska Miner, published at Juneau weekly.
Northern Light, published at Fort Wrangell, monthly.

APPENDIX G.

LIST OF POST OFFICES IN ALASKA JANUARY
1, 1898.

Chilkat,	Loring,
Circle,	Mary Island,
*DOUGLAS,	Metlakatla,
Dyea,	Orca,
FORT WRANGELL,	Ounalaska,
Homer (changed from	Saint Michaels,
Seward),	Sandpoint,
Jackson,	Saxman,
*JUNEAU,	Shakan,
Karluk,	SITKA,
Ketchikan,	Skagway,
Killisnoo,	Sumdum,
Klawock,	Tyoonok,
KODIAK,	Unga.

NOTE. — Money-order offices in capital letters.

*International as well as domestic money-order offices.

APPENDIX H.

SCHEDULE OF RATES, PACIFIC COAST STEAM-
SHIP COMPANY'S STEAMERS.

	Cabin Passage, Single Fare.	Steerage Passage, Single Fare.
San Francisco to Wrangell.....	\$37.00	\$19.00
San Francisco to Juneau.....	44.00	23.00
San Francisco to Sitka.....	52.00	28.00
Puget Sound Ports to Wrangell.....	25.00	13.00
Puget Sound Ports to Juneau.....	32.00	17.00
Puget Sound Ports to Sitka.....	40.00	22.00

Steorage	\$19.00
Passage,	23.00
Single	28.00
Fare.	33.00
	17.00
	22.00

PACIFIC COAST STEAMSHIP COMPANY, ALASKA ROUTE FREIGHT RATES.

From	To Wrangell (Wharfage Additional; Animals Designated Below About \$1 Each; Merchandise, \$2.50 per Ton).				To Juneau (Wharfage Additional; Animals Designated Below About \$1 Each; Merchandise, \$2 per Ton).				To Dyva Anchorage or Skagaway Bay and Sitka.			
	General Merchandise and Miners' Ordinary Supplies.	Horses or Mules.	Burros.	Dogs.	General Merchandise and Miners' Ordinary Supplies.	Horses or Mules.	Burros.	Dogs.	General Merchandise and Miners' Ordinary Supplies.	Horses or Mules.	Burros.	Dogs.
San Francisco (via Puget Sound).....	\$11.00	\$27.50	\$19.50	\$7.50	\$12.00	\$30.00	\$21.00	\$1.50	\$12.00	\$30.00	\$21.00	\$7.50
Seattle, Port Townsend, Tacoma, Wash., or Victoria, British Columbia (Wharfage Additional, 25 to 50 Cents per Ton and per Head on Merchandise and Animals, Respectively).....	8.00	20.00	12.00	5.00	9.00	22.50	13.50	5.00	10.00	22.50	13.50	5.00
Portland, Oreg. (Wharfage Additional, 50 Cents per Ton and per Head on Merchandise and Animals, Respectively).....	8.00	20.00	12.00	5.00	9.00	22.50	13.50	5.00	10.00	22.50	13.50	5.00

*Freight rates to Dyva cover only the anchorage, at which point the company's responsibility ceases. The company assists the passengers to land, and also assists in the landing of the freight without extra charge. Live-stock have to swim ashore.
 †Forty cubic feet or 2,000 pounds, carrier's option.
 ‡Sitka.



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U.S. COAST AND GEODETIC SURVEY

ROUTE MAP

JUNEAU TO PORCUPINE RIVER

ALASKA

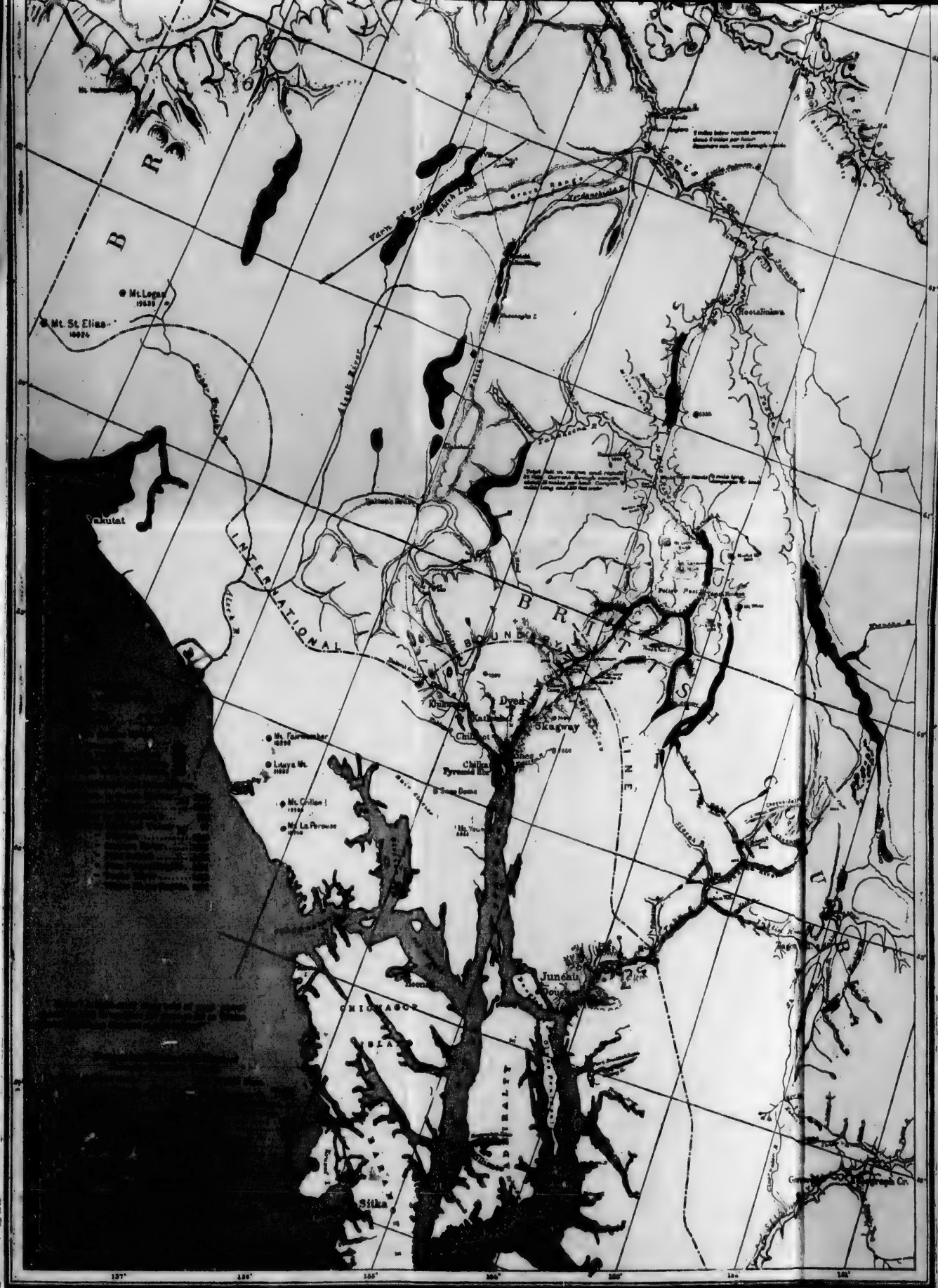
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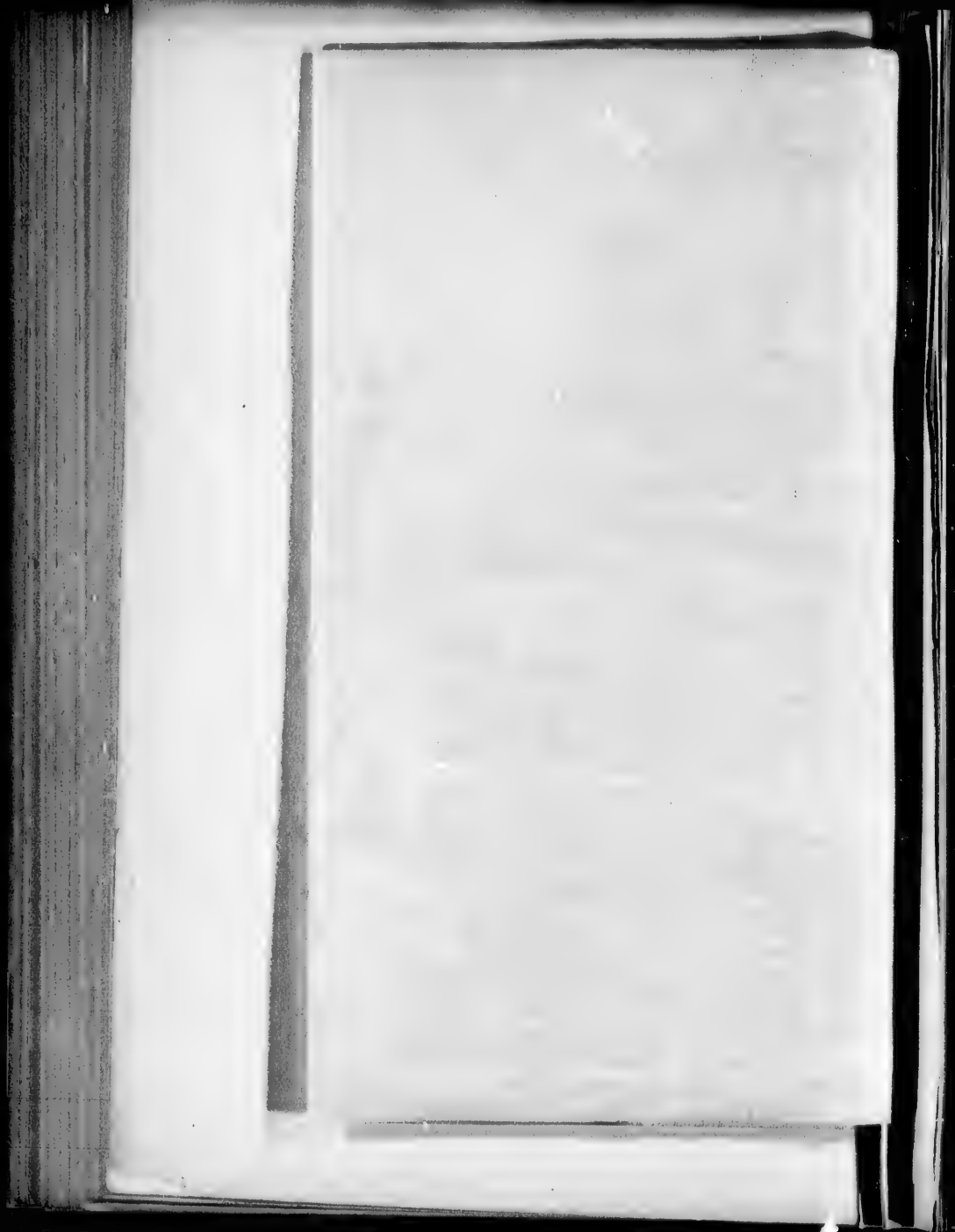
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KANSAS CITY, MO.

Date of first publication 1898



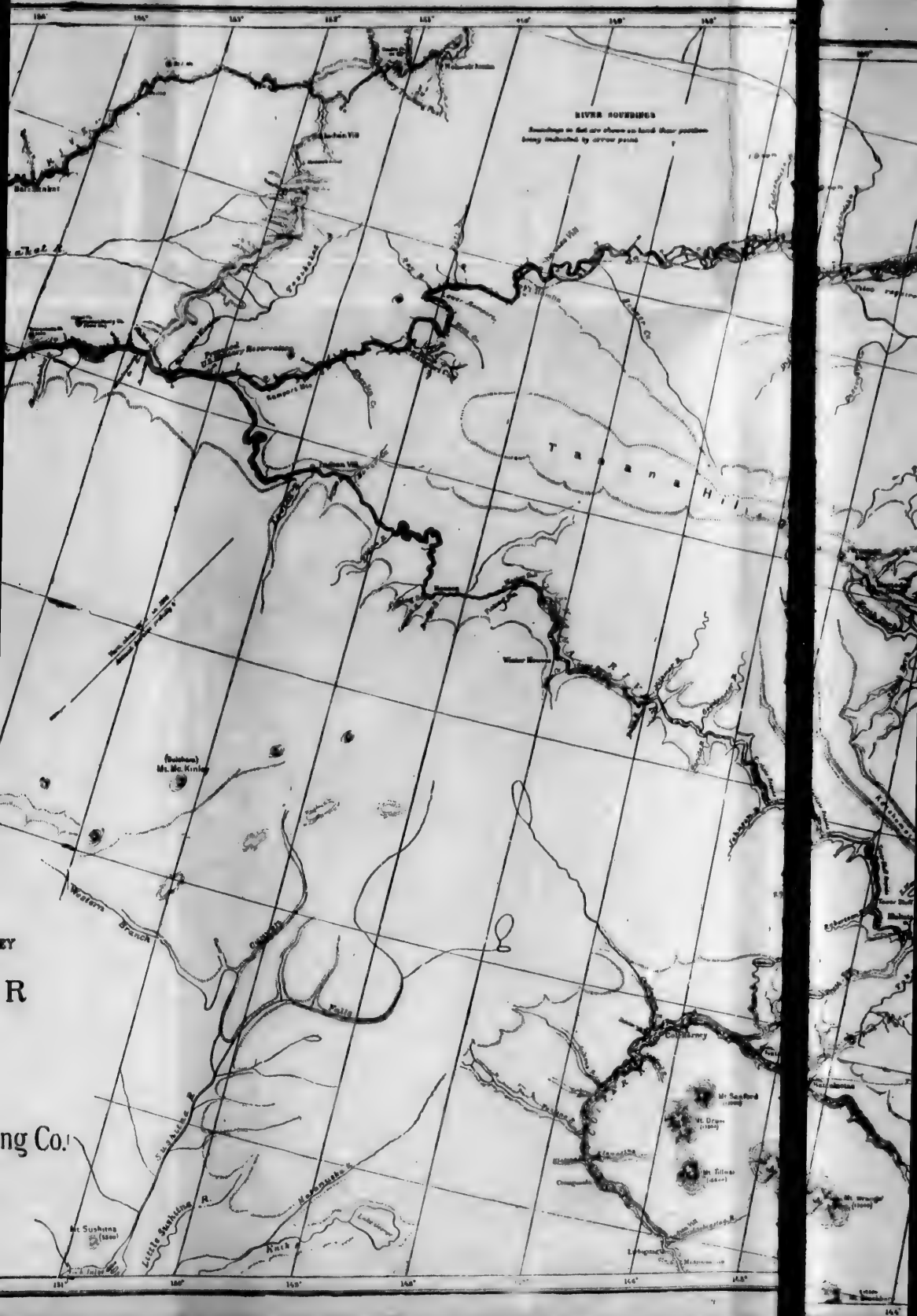


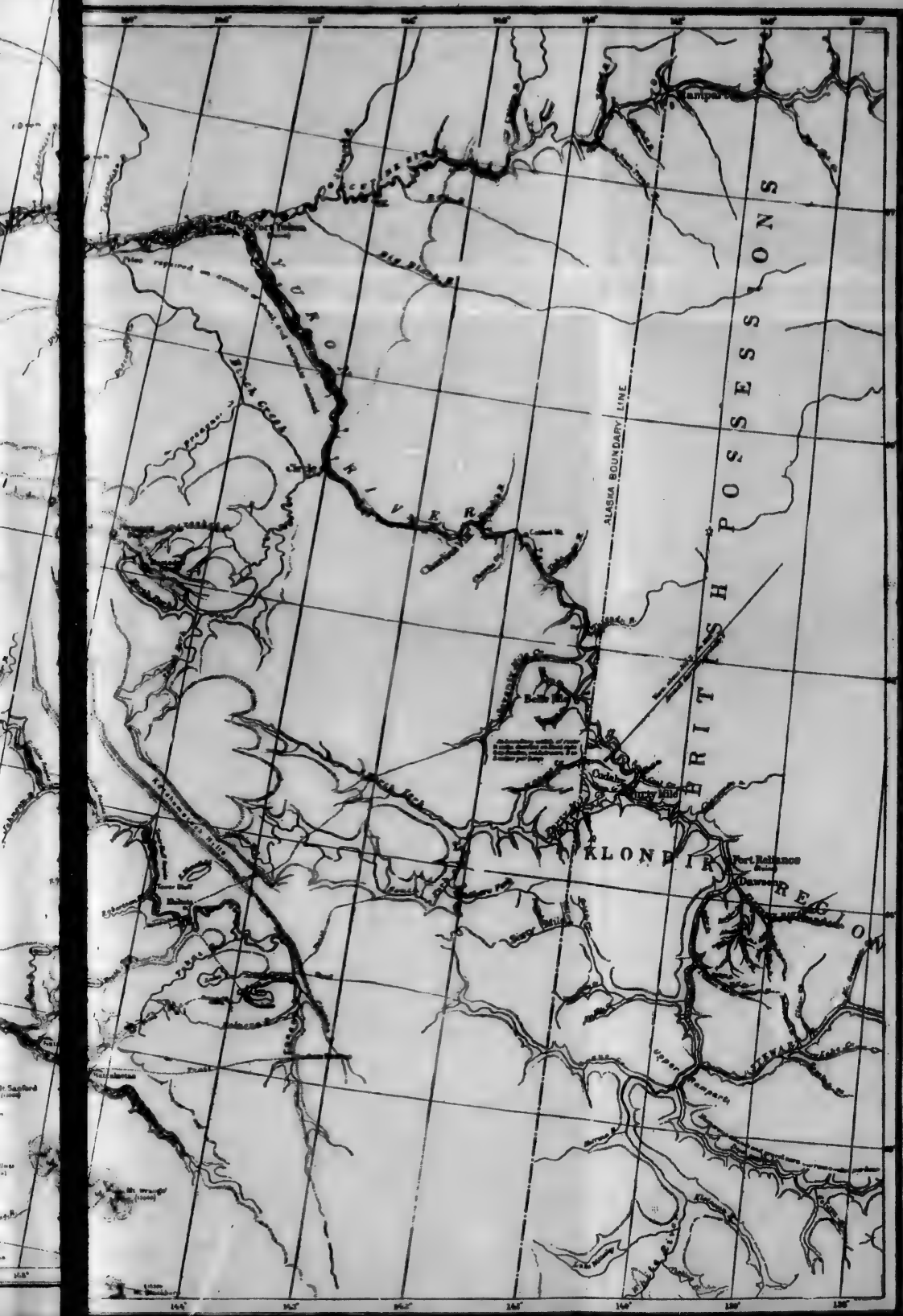




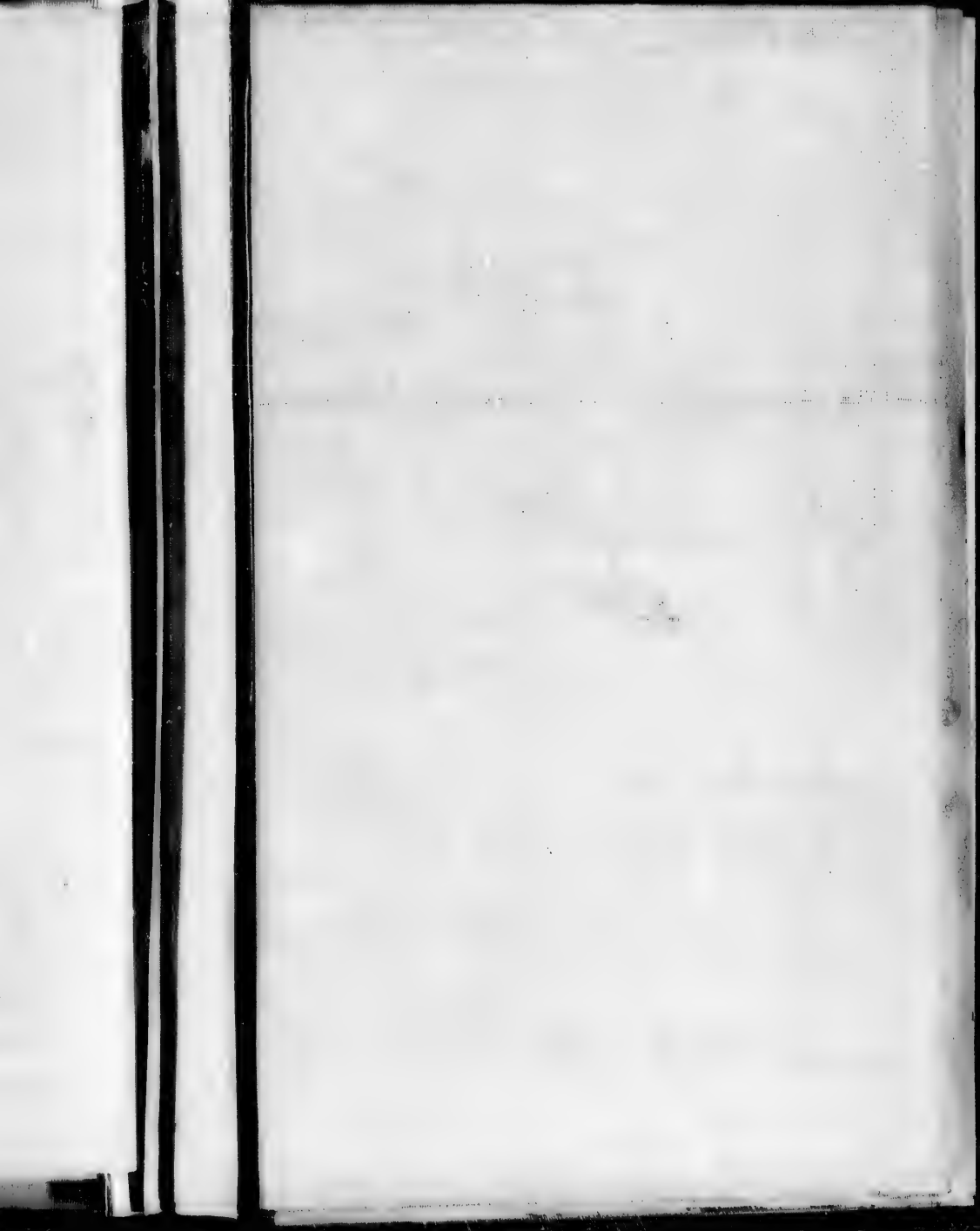
DISTANCES		
Via Chilkoot Pass.		
Seattle to Dyea	112	
Dyea to Dawson	227	
Via Stikine River.		
Seattle to Wrangell	280	
Wrangell to Telegraph Creek	140	
Tele. Cr. to Head of Taku Lake	227	
Head of Taku Lake to Dawson	535	
Via St. Michaels and Yukon River.		
San Francisco to Dutch Harbor	2345	
Seattle to Dutch Harbor	1985	
Dutch Harbor to St. Michaels	760	
St. Michaels to Mouth of Yukon	97	
" " Holy Cross Mission	310	
" " " " " "	380	
" " Mouth of Koyukuk R.	535	
" " Mouth of Tanana R.	705	
" " Rampart City	775	
" " Sheslay Village	865	
" " Mouth of Porcupine R.	995	
" " Circle	1075	
" " Forty Mile	1265	
" " Dawson	1515	



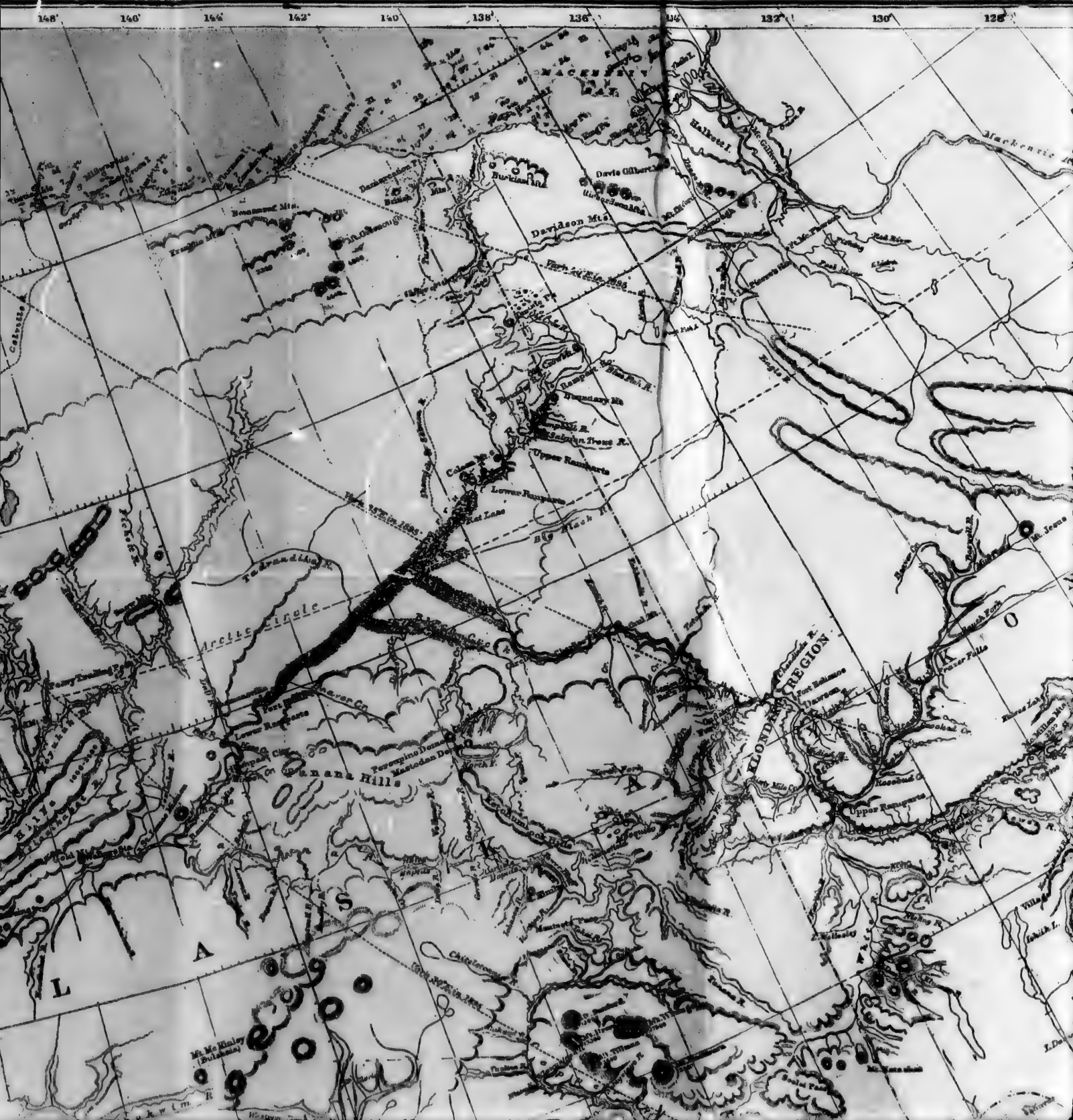












126°

125°

122°

120°

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UNITED STATES COAST AND GEODETIC SURVEY

GENERAL

ALASKA

Compiled from United States

PUBLISHED

Hudson-Kimberly

KANSAS CITY,



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West from Greenwich
60° 55° 50°
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GENERAL CHART OF ALASKA

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